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# Africa Renewal

May-July 2017

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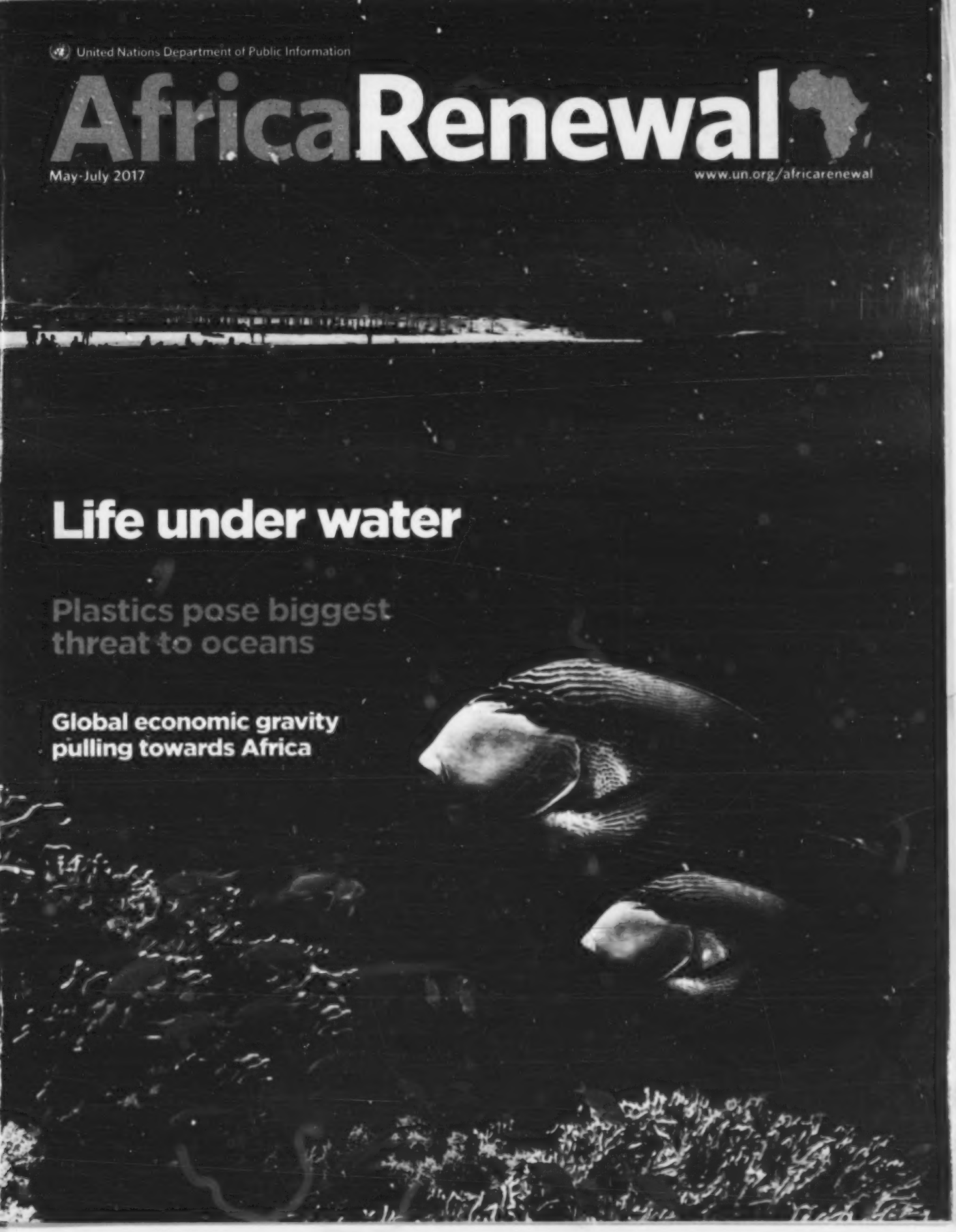

## Life under water

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**Global economic gravity pulling towards Africa**

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Africa Renewal is published by the United Nations, New York, on recycled paper.



*Africa Renewal* (ISSN 2517-9829) is published in English and French by the Strategic Communications Division of the United Nations Department of Public Information. Its contents do not necessarily reflect the views of the United Nations or the publication's supporting organizations. Articles from this magazine may be freely reprinted, with attribution to the author and to "United Nations Africa Renewal," and a copy of the reproduced article would be appreciated. Copyrighted photos may not be reproduced.



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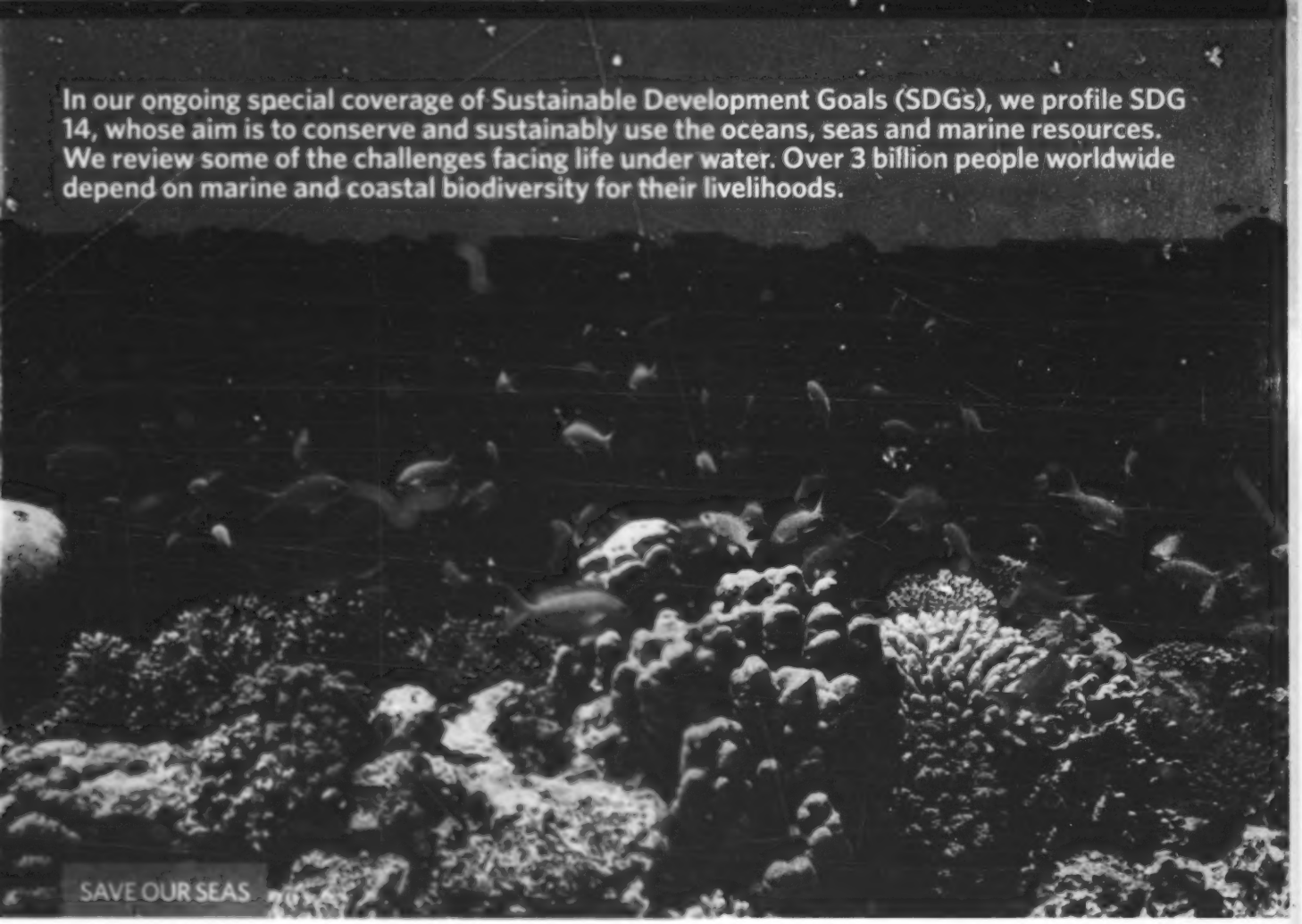
**In our ongoing special coverage of Sustainable Development Goals (SDGs), we profile SDG 14, whose aim is to conserve and sustainably use the oceans, seas and marine resources. We review some of the challenges facing life under water. Over 3 billion people worldwide depend on marine and coastal biodiversity for their livelihoods.**




*An underwater view of fishes and coral reef in the Red Sea near Marsa Alam, Egypt.* Alamy/Jan Wlodarczyk

# It is time to save our oceans

## More efforts required to protect marine life and coastal biodiversity from plastic litter

"The ocean is in deep trouble.... Marine pollution is taking us to a point where, by 2050, there will be more plastic in the ocean than there will be fish," said Peter Thomson, the 71st president of the United Nations General Assembly, in an interview with *Africa Renewal* (see page 10).

Mr. Thomson's dire warning is not a hyperbolic flourish: about 80% of ocean litter is plastics that, when ingested, can kill fish, seabirds, turtles, oysters and other creatures. Also, plastics washed ashore often damage agricultural land and discourage tourism.

Africa is primarily concerned with the livelihoods of its millions of citizens, especially those who live along the continent's 30,500-kilometre coastline and depend on fish for food and income. Every year Kenya's supermarkets alone use about 100 million plastic bags, many of which end up in the ocean. And more plastics, which do not rot, in the ocean means more deaths of sea creatures.

Africa's coastal communities also grapple with a changing climate and overfishing. As a result of coastal erosion, whole communities in Mozambique have had to relocate, while Togo has suffered economic losses of about 2.3% of GDP, according to a 2016 World Bank report.

Africa's policy makers and prominent Africans, including former UN Secretary-General Kofi Annan, are unhappy over the billions of dollars lost annually to illegal, unreported and unregulated fishing. The cost of illegal fishing to Somalia alone is about $300 million annually.

Mostly perpetrated by foreign fishing fleets, overfishing also disrupts ecosystems and endangers biodiversity. Currently some 37 types of fish are on a growing list of species becoming extinct in Africa, including octopus and grouper, which are hardly found these days in Mauritanian waters on the West African coast.

**see page 39**

***Fishermen in Inhaca Island, Mozambique.*** AMO/Paul Weinberg

# Overfishing destroying livelihoods

African waters are powerful magnets for illegal and unregulated foreign fishing operations

BY **KINGSLEY IGHOBOR**

It was midnight on 14 December 2016, when five fishermen in Tombo village near Freetown in Sierra Leone revved up a small outboard engine and powered their boat far out to sea. They threw in their net and soon bagged a good quantity of fish. But as they hauled in their catch, a terrible storm blew in. When the waters finally calmed, one of them, an 18-year-old named Alimamy, could not be found.

Alimamy had stood precariously on the canoe's edge—something he was used to doing—onloading the fish when the storm waves hit. He was tossed overboard and drowned, despite his colleagues' frantic efforts to save his life.

"It was a sad day for us in this village," said Samuel Bangura, the local harbour master, who recounted the story to *Africa Renewal*. Mr. Bangura, whose job includes the search and rescue of fishermen missing at sea, had dispatched a search party to recover Alimamy's body.

## Dwindling fish populations

Tragedies such as these are common in Africa's coastal nations but fishing itself is in deep trouble. Fish populations are being lost due to overfishing, forcing boats like Alimamy's to sail far from home. "There are no fish nearby anymore," lamented Mr. Bangura.

Overfishing occurs when more fish are caught than the population can replace through natural reproduction. This is linked to illegal, unreported and unregulated fishing (IUU) or fishing piracy.

Some 37 species were classed as threatened with extinction and 14 more were said to be "near threatened" from Angola in the south to Mauritania in the north, according to the International Union for the Conservation of Nature (IUCN).

Mr. Bangura lays blame on foreign trawlers scooping ashore almost every life form at the ocean floor. "We are competing with big trawlers," he said. "They take all the fish and they destroy our nets."

The sturdy fishing trawlers, owned mostly by Asian and European companies, are able to drag better and stronger trawl nets over a large expanse of sea bed. The trawlers can easily withstand sea turbulence and are able to mechanically haul netted fishes into pre-positioned storage rather than haul them by physical labour.

In Somalia and Tanzania, trawlers "deploy giant, non-selective nets, wiping out entire schools of tuna, including the young ones, which they discard dead," reports IUUWatch, a European Union based organization whose website is sponsored by The Environmental Justice Foundation (EJF), Oceana, The Pew Charitable Trusts (Pew) and World Wide Fund for Nature (IUU) fishing.

## Illegal trawling

Some trawlers are licensed in Africa while others operate illegally. The licensed ones pay taxes, although the dynamic nature of the fishing business complicates tax computation. Many governments lack the capacity to monitor the operations of fishing fleets, thus undercutting efforts to fix fair tax rates, let alone collect revenues.

Mr. Bangura expressed outrage that illegal fishing vessels operate with impunity in Sierra Leonean waters, but it is also a situation that puts African countries in a bind. Governments need revenues, no matter how meager, to invest in agriculture, social services and other sectors that can expand economic opportunities. Yet fishing revenues are low compared to the tons of fish that are carted away.

"The revenue generated by these catches doesn't make it back into state coffers," observes Dyhia Belhabib, research associate and fisheries scientist at the University of British Columbia, Canada. "Boats from China and Europe caught fish valued at $8.3 billion over 10 years (from 2000 – 2010) from the [West African] region. Only $0.5 billion went back into local economies."

An additional $2 billion worth of fish is "either taken out without prior consent from local governments or is never reported due to illegal, unreported and unregulated fishing," maintained Ms. Belhabib.

In July last year, a Spanish trawler 'Gotland' was impounded in Spain for illegal fishing in Senegalese waters. The vessel, registered in Mauritania with a Russian crew, fled to the Exclusive Economic Zone waters of Mauritania after it was spotted by Senegalese security authorities.

In October 2016, Somali authorities observed a Panamanian-registered fishing vessel named GREKO 1, flagged to Belize, seeking port access in Mombasa. The vessel escaped to Kenya where it was arrested under the FISH-i protocol. The FISH-i is a programme by Comoros, Seychelles, Somalia, Kenya, Madagascar, Mauritius, Mozambique and Tanzania to combat IUU through information sharing and enforcement.

The Somali authorities settled out of court with the registered owner and a $65,000 fine was paid.

In 2015, two of six fishing vessels (dubbed the "Bandit 6") on Interpol's wanted list were arrested on the Cape Verdean coast, off the port of Mindelo, as they poached toothfish–a tasty relative of cod typically sold in North America. Their arrest followed a campaign by the ocean conservation group Sea Shepherd.

## Overfishing in African waters

West African waters are powerful magnets for foreign fishing operations because they "are amongst the most fertile in the world," notes Greenpeace, underscoring that the resources are fast dwindling. Some of the endangered fishes include Osteichthyes, popularly known as bony fish, which has 1,288 species, majority of which are found on Africa's west coast. The Madeiran sardine is overfished in west and central Africa, according to the International Union of Conservation of Nature (IUCN), the world's largest environmental network. The IUCN reported in January that due to overfishing, "the endangered Cassava croaker is estimated to have declined by 30% to 60% over the past 10 years."

The United Nations Food and Agriculture Organization further estimates that 57% of fishes are exploited while 30% are over-exploited or depleted.

As far back as 2013, the journal *Fish and Fisheries* reported that the octopus and grouper fish were hard to find in Mauritanian waters, having been fished away by trawlers from Europe and Asia.

## Destroying livelihoods

IUCN director-general Inger Andersen insists that the livelihoods of local coastal communities still could depend on properly managed marine fish species.

"Fish provides a major source of animal protein for the coastal communities, which account for around 40% of this region's population," said Mr. Andersen, adding that the current situation undermines Sustainable Development Goal 14, which refers to life below water.

Africa loses billions to illegal fishing, corroborates Kofi Annan, a former UN secretary-general and head of the African Progress Panel, a group of 10 distinguished individuals who advocate for the continent's sustainable development. Somalia alone loses $300 million annually to pirate fishing.

A direct consequence of overfishing is that communities relying on fish as a source of protein have less to eat. This leads to malnutrition, especially in children. Women who mostly process the fish earn less than they did previously. In West Africa, times are rough for the nearly seven million people who depend on small-scale fisheries.

## Efforts underway

To combat overfishing, Greenpeace recommends countries set up regional fisheries organisations, reduce the number of registered trawlers operating in African waters, increase monitoring and control and ensure that fish processing operations are managed by Africans.

The World Bank's West Africa Regional Fisheries Program (WARFP), whose participating countries are Liberia, Sierra Leone, Cape Verde and Senegal, has empowered countries with information, training and monitoring systems.

Under WARFP, small-scale fishers receive training in the use of GPS-enabled cameras to take photos of illegal trawlers. As a result, by 2016, Liberia had collected $6.4 million in fines from IUU fishing, while the percentage of foreign vessels committing IUU infractions fell from 85% to 30%.

Liberia also enacted a fisheries regulations Act in 2010 and installed a

**see page 39**

# Plastics pose biggest threat to oceans

Oceans chocking on millions of plastic water bottles, cups, straws and single use plastic bags

BY **ZIPPORAH MUSAU**

*A man sorting a sea of plastic bottles at one of the Wecycler hubs in Lagos, Nigeria. Most plastic litter from cities ends up in oceans.* Panos/Joan Bardeletti

**99%**

of all seabirds will have ingested plastic by 2050 if nothing is done to reverse the trend.

Renowned American oceanographer Sylvia Earle has studied the sea extensively for more than 60 years, and logged more than 7,000 hours researching and filming marine life since her first dive at age 16.

Ms. Earle, who in the 1980s was the first woman chief scientist of the National Oceanic and Atmospheric Administration, now faces a challenge greater than the round-the-world oceanographic cruise she took in 1964 or the 1970 experiment for which she, and her all-female crew, spent two weeks in an underwater capsule on a coral reef.

Ms. Earle is rallying the world to save the seas, which face the deadliest threats to their existence—as do the millions of world citizens whose survival depends on them.

From her bully pulpit, Ms. Earle warns that sea life is being destroyed from every direction, by a combination of overfishing, rising temperatures and plastic waste. She notes that since the 1950s, the world has lost 50% of its global coral reefs and 90% of its big fish.

Oceans are choking on plastic junk—millions of tonnes of water bottles, soda bottles, drinking straws and single use plastic bags. Worse still, what we see floating on the surface accounts for only 5% of all the plastic litter that has been dumped into the sea. According to Ocean Conservancy, a US environmental non-profit, the other 95% is beneath the surface, where it strangles underwater creatures and wrecks aquatic ecosystems.

"Oceans are now clogged with plastics, especially discarded fishing gear and single-use plastics," Ms. Earle told *Africa Renewal* in an interview.

Today the world is producing 20 times more plastics than 40 years ago. This means that each year more than 8 million tonnes of plastic end up in the oceans, wreaking havoc on marine wildlife, fisheries and tourism and marine ecosystems. Only less than 14% of all plastic is recyclable, and it is high time someone came up with an innovation or technology to deal with the remaining 86%, which could create $80bn-$120bn in revenues, according to a recent report by the Ellen

MacArthur Foundation which works with business, government and academia to build an economy that is restorative.

Sadly, plastic waste that finds its way into the ocean will remain there for hundreds of years because plastic does not rot. In fact, plastic is so durable that the United States Environmental Protection Agency says, "Every bit of plastic ever made still exists." Once it gets in the seas, plastic waste leaches chemicals, many of them toxic, into the seas.

"Up to 80% of all litter in our oceans is made of plastic. At the rate at which we are dumping items such as plastic bottles, bags, cups and straws after a single use, by 2050 we will have more plastics in the oceans than fish," warns the United Nations Environment, the UN agency mandated to protect the environment.

Because of its low density, plastic litter is easily transported over long distances from source areas. The ocean undercurrents scatter it to every corner of the earth, some of it floating on the oceans and others sinking to the seabed.

According to the US-based Center for Biological Diversity, there are "15–51 trillion pieces of plastic in the world's oceans—from the equator to the poles, from Arctic ice sheets to the sea floor." Emerging research suggests that not one square mile of ocean surface anywhere on earth is free of plastic pollution.

Making matters worse, the cosmetics industry now adds tiny plastic beads called "microbeads" to hundreds of toiletries, such as body and facial scrubs and even toothpaste. These tiny particles easily go through water filtration and drainage systems to end up in the sea, where they are ingested by fish and seabirds. UN Environment warns that about 99% of all seabirds will have ingested plastic by 2050 if nothing is done to reverse the trend.

Africa has not been spared the plastic menace. Even though most of the plastic trash in Africa comes from outside the continent, African cities and coastal towns are grappling with their own mountains of garbage, mostly plastic that ends up in the ocean. Ms. Earle cited the islands in the northwest Indian Ocean as the most affected by plastic marine litter in Africa.

Plastics in the ocean kill or harm more than 300,000 marine animals every year, said Ms. Earle. Some creatures get entangled in the plastic debris, while others like seabirds, turtles, fish, oysters and mussels ingest the plastics, which end up clogging their digestive systems and causing death. Fish and birds mistake smaller plastic particles for food and feed on them in enormous quantities.

"When the young birds eventually die, you can literally see small balls of plastics next to their skeletons after the body decomposes," Ms. Earle lamented.

The plastic menace has become so dire that in February the UN launched the Clean Seas campaign at the *Economist's* World Ocean Summit in Bali, Indonesia. This is a global effort to convince governments to pass plastic reduction policies, and industry to minimize plastic packaging and redesign its products. The UN is also urging consumers to change their plastic disposal habits before irreversible damage is done to the seas.

**By 2050**

we will have more plastics in the oceans than fish according to the United Nations Environment

"It is past time that we tackle the plastic problem that blights our oceans. Plastic pollution is surfing onto beaches, settling onto the ocean floor, and rising through the food chain onto our dinner tables. We've stood by too long as the problem has gotten worse. It must stop," said Erik Solheim, the head of UN Environment, at the launch of Clean Seas campaign.

Throughout the year the campaign will be announcing ambitious measures taken by countries and businesses to ban or tax single-use bags, eliminate microplastics from personal care products and otherwise dramatically reduce the use of disposable plastic.

So far more than a dozen countries in Africa—among them Cameroon, Ethiopia, The Gambia, Guinea-Bissau, Malawi, Mali, Mauritania, Rwanda, Sierra Leone, Tanzania and Uganda —have either adopted or proposed bans on polythene bags.

Early this year Kenya announced a ban on the manufacture and import of all plastic bags, effective later this year. Some 100 million plastic bags are handed out every year in Kenya by supermarkets alone, which UN Environment says, become trash that will kill birds, fish and other animals that mistake them for food, damage agricultural land, pollute tourist sites and provide breeding grounds for the mosquitoes that carry malaria and dengue fever.

## Turning the tide

"Are our oceans dead? I would say they are not dead yet, but they are in deep trouble," says Ms. Earle. "Plastic marine litter knows no boundaries and can wash up on any shores, including those of uninhabited islands. It is a global problem requiring a global action."

Ms. Earle believes governments should pass laws that discourage the use of single-use plastic such as bags, cups, bottles and the microplastics that are used in millions of items every year. She further suggests incentives for citizens who make choices that limit their use of plastics, such as by using cloth or sisal bags for shopping, adding that countries can also tax those who use plastics and use the money for cleanups.

Big corporations have joined the global effort to turn the tide of marine litter. The technology company, Dell announced in February that it has started using recycled plastic fished out of the sea for its product packaging.

More announcements and pledges by countries and organisations worldwide are expected at 'The Ocean Conference' to be held at the UN headquarters in New York on 5-9 June, that will bring together governments, the UN agencies, financial institutions, NGOs, civil society, academia, scientists, the private sector and other actors to assess challenges and opportunities relating to, as well as actions taken towards the implementation of Sustainable Development Goal 14: Life below water.

At the individual level, choosing reusable shopping bags, cups, straws and water bottles, and saying no to personal care products that contain microplastics and plastic packaging can go a long way toward curbing the plastic menace. When it comes to plastics, no action is too small to make a difference.

*The Sahel has been battered by drought due to climate change.* Panos/JB Russell

# Africa feeling the heat of climate change

## Affected countries require funds to build more resilient and climate-smart economies

BY **DAN SHEPARD**

Researchers are still trying to learn why the population of African penguins has dropped precipitously over the last 15 years—some estimates say by 90%—but most agree that climate change is a major factor in the decline of this iconic African species.

There may be additional forces at work, including pollution, overfishing, predators and disease, but warming currents on both sides of the continent are driving the huge shoals of sardines and anchovies on which the penguins dine farther south toward cooler waters.

Warming waters are not a problem only for penguins and other sea creatures. They have major implications for coastal communities all around the continent, where a quarter of all people rely on the ocean as a primary source of food.

Globally, average temperatures will increase by more than 2°C by the end of the 21st century, and could increase by as much as 3°C by 2050 and even by 6°C by 2100. The impacts of this warming on the ocean surrounding the continent are already being felt.

Small-scale artisanal fishing and tourism are critical economic pillars for communities along Africa's 30,500-kilometre coastline. Many of these are grappling with the effects of climate change, including rising sea levels, warming waters and increasing ocean acidification, which has led to greater coastal erosion that has damaged infrastructure in West Africa. A warming Indian Ocean has damaged coral reefs that are essential for tourism, fishing, and the protection of the shoreline.

"One of the biggest threats to coastal and marine systems in Africa is climate change," says Yuvan A. Beejadhur, team leader on ocean economy at the World Bank, adding, "The impacts are already being detected in many areas of the continent."

According to Mr. Beejadhur, natural resources specialist, sea temperatures in coastal boundary systems may continue to increase over the next few decades and centuries. If current trends continue, sea temperatures will increase from 0.62°C to 0.85°C over the next few years and from 2.44°C to 3.32°C over the long term, he warns.

"This will mean Africa will need a cascade in financing. It will require significant funds, finance and investments that need to be unlocked, leveraged and catalysed for building resilient and climate-smart ocean economies," he predicts.

Jacqueline Alder, manager of Global Partnerships for Responsible Fisheries at the Food and Agriculture Organization (FAO), also notes the significant impact on coastal infrastructure of coastal erosion. Fishery landing sites have been forced to move, resulting in higher fishing costs. In some cases poorer-quality fish has led to lower market prices.

In addition, more frequent flooding has affected coastal systems, with runoff from the storms ending up in the oceans, reducing the salinity of the water and causing fish to move farther offshore. Consequently fishermen have to travel farther to catch fish, "or they don't fish at all," she says.

In Mozambique, coastal erosion due to rising sea levels has significantly altered the coastline, says Eugénio João Muiange, the director of the National Institute of the Sea and Boundaries. "When we look at old maps and compare them with now, we see lots of changes. Small islands and sandbars have disappeared."

"Erosion has eaten land 2 to 3 kilometres inland," he adds. "When we look for a reason, we can only reach one conclusion—that it is sea-level rise."

Coastal erosion has led to the displacement of communities in West Africa and has already resulted in economic losses of about 2.3% of GDP in Togo alone, the World Bank reported in 2016.

Ronald Jumeau, permanent representative of the Seychelles to the UN, says many of these trends have been noticed for years yet were poorly understood. Coastal erosion in West Africa has been "huge," he says, and as a consequence many people have been forced to abandon their communities on the coast and look inland for new opportunities. "Suddenly it becomes a political issue," he says, adding, "There's a demographic shift underway."

African countries often lack the data, the computing power and the analytical ability to take action, Mr. Jumeau points out.

Another result of climate change is ocean acidification. As the ocean absorbs greater amounts of carbon dioxide, it becomes more acid, and its changing chemistry poses a threat to coral reefs and biodiversity. About 30% of carbon dioxide caused by human activity dissolves into the oceans, and the increased acidity prevents organisms that depend on calcium carbonate from producing shells and skeletons.

Fisheries in the western Indian Ocean—off the east coast of Africa—mainly depend on coral reefs, Mr. Jumeau points out. Increased coral bleaching and mortality (generally caused by warming ocean temperatures) will have negative effects on fisheries, fishery-related employment and nutrition.

Corals across the western Indian Ocean declined by an average of more than 35% after bleaching events in 1998, 2010 and 2016. Such events have an economic cost: the coral bleaching event in 1998 cost the scuba dive tourism industry an estimated $2.2 million in Zanzibar and up to $15.09 million in Mombasa, Kenya.

## Acidification of the ocean

Coral reefs in the Seychelles also suffered from the 1998 bleaching event, which was caused by warming from an El Niño weather phenomenon, but other bleaching events have also affected the country, recalls Mr. Jumeau. Some reefs have since been restored to health; others have not. Coral reefs are an essential tourist attraction and provide protection from coastal erosion for the hotels on the islands.

Around 2.5 million tourists per year visit the tropical coast area of Egypt; 23% of these tourists come specifically to dive, and a further 33% participate in snorkelling activities.

Cognizant of the destructive impact of climate change on the oceans around Africa, affected countries came together at the African Ministerial Conference on Ocean Economies and Climate Change in Mauritius in September last year to assess the challenges faced by coastal and marine systems in Africa and discuss the need to develop climate-ready ocean economies.

And last November, at the 2016 Marrakech Climate Conference held in Egypt, the World Bank, the Asian Development Bank and the FAO announced a "African package for climate-resilient ocean economies," an ambitious bundle of technical and financial assistance focused on measures to build resilience, reduce vulnerability, develop early warning systems and optimize carbon sequestration.

Between 2017 and 2020, the initiative will mobilize between $500 million and $900 million and implement programs linked to climate change adaptation and mitigation.

World Bank experts caution that without action, fish catches are projected to drop because of climate change—possibly by one half in Côte d'Ivoire, Ghana, Liberia, Nigeria, Sierra Leone and Togo, according to the FAO.

"These ambitious programmes aimed at strengthening the resilience of African coastal communities are critical to meeting the challenges and opportunities of climate change, especially for vulnerable Small Island Development States," observes Maria Helena Semedo, FAO's deputy director-general for natural resources.

"African coastal communities are some of the most affected by climate change," she continues. "FAO is fully engaged and ready to be at the heart of these significant developments to work alongside countries and communities to reduce their vulnerabilities, build their resilience, and maximize opportunities emerging from climate change."

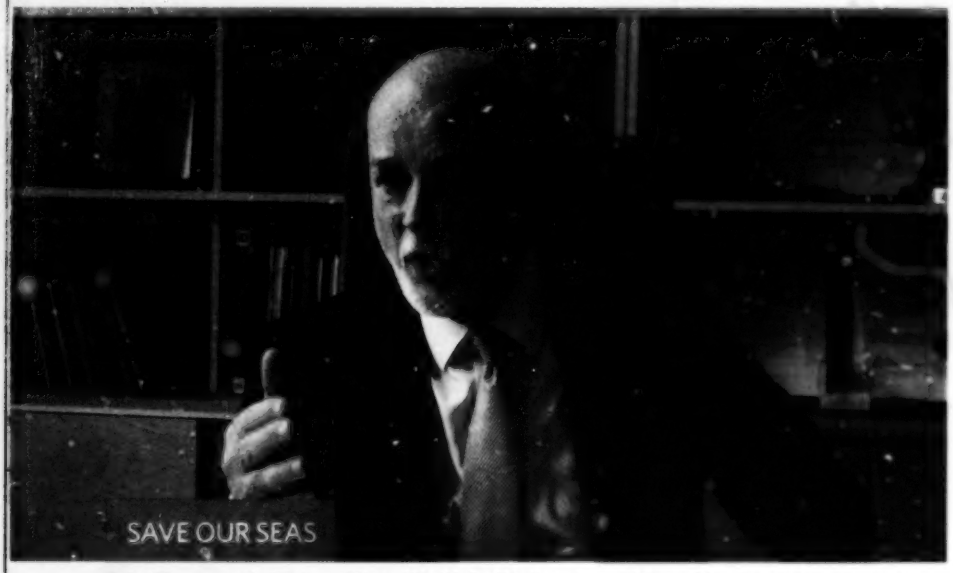
The African package for climate-resilient ocean economies is composed of five flagship programmes, and each will have its own focus as well as sharing knowledge and best practices with the others.

In North Africa, the focus will start with fisheries, aquaculture and ocean observation systems; West African priorities will include fisheries, combating coastal erosion, and building tourism; in Central Africa, stretching from Cameroon to Angola, priorities will include a focus on safety at sea; East Africa will develop its aquaculture and tourism; and the Small Island Developing States, often the most dependent on the oceans and the most vulnerable to disaster and erosion, will focus on the development of an economy designed for sustainable development, generally referred to by experts as the "blue economy."

African countries will be participating in the Ocean Conference to be held this year in New York from 5-9 June, which is aimed at promoting the implementation of Sustainable Development Goal 14 (Life below water). The goal calls for action to address a range of ocean issues, including protecting marine biodiversity, reducing overfishing and addressing ocean acidification and marine pollution.

# Ocean Conference: Our best and last chance to get things right

— Peter Thomson




*Peter Thomson, the 71st president of the United Nations General Assembly.* UN/Eleni Mourdoukoutas

**Peter Thomson** assumed his current one-year term as the 71st president of the United Nations General Assembly in September 2016. Before that Mr. Thomson had served since 2010 as Fiji's permanent representative to the United Nations and its ambassador to Cuba. *Africa Renewal's* **Masimba Tafirenyika** sat down with Mr. Thomson in New York to discuss preparations for the Ocean Conference to be co-hosted by the governments of Fiji and Sweden at UN headquarters from 5 to 9 June 2017. The UN Conference to Support the Implementation of Sustainable Development Goal (SDG) 14, as it is officially called, coincides with World Oceans Day (June 8). SDG 14 deals with the conservation and use of oceans, seas and marine resources for sustainable development. The following are excerpts from the interview.

**Africa Renewal: Could you please tell us why the UN is organizing such a major conference on oceans now, and what you expect to achieve?**

**Mr. Thomson:** The ocean conference is in support of [SDG] 14, which is mandated under the 2030 Sustainable Development Agenda to conserve and to sustainably manage ocean resources. This conference is probably the best and possibly the last opportunity to reverse the cycle of decline the ocean is currently caught in. That may sound alarmist, but, coming from an island country, I know the ocean is in deep trouble. The science is clear. Marine pollution is taking us to a point where, by 2050, there will be more plastic in the ocean than there will be fish. We just need to look at the effects of climate change on the ocean to see how much trouble the ocean is in. Take a look around to see what human sewage and runoff from agriculture and industry are doing to coastal ecosystems. This ocean conference is very timely. We will have scientists, civil society and the private sector present. This is not just about governments; it's about humanity responding to the woes that have been put upon the ocean and correcting them.

**You recently said that human-induced problems require human-induced solutions. What did you mean by that?**

The Paris Climate Agreement is a human solution to a human-induced problem. Our big job is to stay true to that agreement. When you look at ocean acidification, the solutions will emerge. I don't pretend to have them on my desk, but I have talked to experts; it's about understanding the problem and then working out solutions. We have to stop these crazy subsidies that are given by industrialized nations to fishing fleets. We have to identify what species are under threat and agree to only fish to quota or stop fishing those species altogether. Those are human solutions. We're tipping a garbage truck full of plastic into the ocean every minute of every day. We have to have better rubbish collection systems. We have to do what Rwanda has done: ban plastic bags. Just don't use plastic bags, even if your government can't get around to banning them.

**You mentioned the effect of climate change on fish. How can we reverse the trend and support the worst-affected regions?**

The overall problem is climate change—bringing ocean warming and ocean desertification. That's the mother of them all in terms of problems with fish stocks. We have to stay true to the Paris Climate Agreement. But beyond that, we can set up marine protected areas where we can sustainably manage our fish stocks. We have to stop illegal and harmful fishing practices

such as bottom dredging. We have to end those ridiculous fish subsidies and use that money to restore coastal ecosystems.

**As you pointed out, some parts of the ocean are heavily polluted. What are the other main pollutants besides plastics?**

Microplastics, which are bits of plastic inserted into things like toothpaste and face creams and other cosmetics, are a big problem. We have to stop the industrial use of microplastics because they get ingested into the biosphere. Their implications are far-reaching. When I was in Indonesia recently, I talked to a minister who said they have come to realize that by not paying more attention to how garbage, which is basically plastic, gets into the ocean, they were hurting employment. This is because it puts tourists off when they start getting hit by plastics at a beach. Basically, the minister was saying they've come to realize that if they want tourism to flourish—it's a great job provider and earner of foreign exchange—they've got to clean up the plastic pollution on their beaches and in their seas.

**Since, as you said, plastics are the main pollutants, and given how the global economy is dependent on plastic products, can the world survive without plastics?**

Absolutely! Human ingenuity knows no bounds, and I have no doubt that we will break this problem. It was within my lifetime when plastic problems emerged in the world, and within my children's lifetime that it should be solved. Hopefully in my lifetime, but I doubt it. There's a lot of thought being put into a more circular economy to reuse plastics so that they're not thrown away. If you must have a plastic cigarette lighter, why can't it be a refillable one? Likewise with plastic straws, they're one of the big things that end up on the beaches. Why not substitute that with paper straws?

**You have talked about fishing subsidies. Are countries that provide these subsidies willing to stop them? And if not, what should be the solution?**

First of all, let's look at the problem. The problem is we have massive fleets of industrialized fishing boats out there basically depleting the world's fish stocks. Let's sort this out: an easy target from my point of view is fishing subsidies. Where do you address that? It's at the World Trade Organization [WTO], which is the best forum for dealing with subsidies. But it should also be among the domestic populations of the countries concerned. They should be saying, "Why is our money being spent on these fleets which are no longer economically viable?" There also needs to be international action at WTO level. The Ocean Conference will be a good platform for us to articulate that.

**Obviously it won't be easy given the experience with talks at the WTO.**

No, but they need to start waking up to some of the realities. I was in West Africa recently and I saw the huge infrastructure in artisanal fishing. Thousands of boats line up on the beaches. As the fish is depleted by these big, industrialized fleets, what can these guys do with the boats which are basically their only family possession of value? People will turn to things like human trafficking as an alternative if there's no fish out there anymore. And the pirogues that I saw are fully capable of moving from the West African coast to Europe. This is the consequence of irresponsible industrial fishing. If you're going to be killing off the livelihoods of artisanal fishermen, expect there will be negative consequences. And it's also a driver for migration if people lose their traditional livelihoods.

**You mentioned the effect on small island developing states (SIDS) to changing weather patterns, particularly rising sea levels. What are we doing about it?**

SIDS are particularly vulnerable to these changes in the ocean. This is one of the reasons why the SIDS were the ones that were really at the forefront of the formation of SDG 14, the call for the Ocean Conference and the call for ongoing action between now and when [by 2030] we are mandated to achieve success. In fact, some of the targets within SDG 14 fall earlier than that. For SIDS, ocean warming is one of the biggest of threats—I think it's about 40% of the drivers of the rise in sea levels. For some countries, this means going totally under water.

**How do you respond to critics who say, "Well, the UN is very good at talking and organizing conferences but we do not see much action on the ground"?**

One of the things I say about the United Nations is that we are not the be-all and end-all. We are basically the gathering of humanity. We don't come from another planet. What we are trying to do with the Ocean Conference is say to humanity, "We've caused this problem. What are we going to do to fix it?" This is a conference not just for governments. It's open to civil society, the private sector and NGOs. We are hoping to raise hundreds, hopefully thousands of voluntary commitments through an online register—that's an action agenda we can work with in the coming years.

**How far are African countries involved in the conference?**

Africa has a massive coastline. I've been encouraging African countries to participate at the conference at a high level because this is existential business for many of them who rely on the ocean so heavily for their protein. When I was in Ethiopia, they said, "SDG 14? Glad to hear you're working on that, but we don't have a coastline." I said, "Look, 50% of the air you are breathing comes from the ocean. If something goes wrong with the ocean's health, it'll affect you. Think in terms of getting behind SDG 14 even if you are a landlocked country."

**So how much cooperation have you been getting from African countries?**

I was in Senegal and they're very fired up about it. They will be one of the co-chairs of the partnership dialogues, so I've encouraged them to speak to the rest of the West African community. Kenyans are very involved and I've encouraged them to speak to the rest of the East African community. This has been my approach. When I was in Egypt, I told them, "Please make sure this is not a forgotten corner of Africa. You've got the Red Sea. You've got the Mediterranean—both with big problems. Be [at the conference]." So there's a lot of skin in the game for Africa at this conference, and I hope to see many African leaders present.

**And finally, how optimistic are you about implementing the conference's resolutions?**

Look, two years of hard work have gone into this conference. It was clear to me after the preparatory meeting a month or so ago that the momentum is there. It's clear to me from just talking to big civil society organizations,

**see page 39**

*Salva Dut (left) pumps water from one of the boreholes he has helped drill in South Sudan.* Water for South Sudan

WATER

# How South Sudan's 'lost boy' brought water to his village

## Salva Dut, a former refugee, has helped drill 300 boreholes in his country

BY **ZIPPORAH MUSAU**

Salva Dut was 11 years old, sitting through the last lesson in class and looking forward to the trip home with his schoolmates. Suddenly all hell broke loose. An infernal civil war had ignited in his native South Sudan. The year was 1985.

After a single gunshot, the teacher peeked outside, just as more gunshots rent the air. "Get down, lie on the floor," the teacher cried out to the frightened pupils.

Rebels from southern Sudan had taken up arms against the government in the north in a war for independence. Suddenly it was no longer safe for the students to remain at school, and the teachers ordered them to run and hide in the bushes, because they knew their villages would be attacked soon.

This marked the beginning of a long odyssey for Salva and the other boys from

Loun-Ariik village fleeing from war. He escaped before seeing his parents or knowing whether they were alive or not.

He joined a group of villagers from his Dinka ethnic group who walked for two months, with many succumbing to hunger, dehydration and famished wild animals along the way. Upon reaching neighbouring Ethiopia, they were sent to Itang refugee camp in the western part of the country. Salva was among some 20,000 children, mostly boys between 7 and 17 years of age, according to UNICEF, who were separated from their families during the war and ran into the bush and who came to be known as the "lost boys of Sudan".

After six years at the Ethiopian refugee camp, it was time to move again. Salva led a group of 1,500 "lost boys" who walked hundreds of kilometres over 18 months, through the desert and across three countries, to reach Kakuma refugee camp in northern Kenya. Only 1,200 boys made it to Kenya. There Salva had the good fortune to get a sponsorship to travel to the United States in 1996.

In the United States, Salva was taken in by an American family and a church in Rochester, New York, who took him to school. All this time he kept wondering what had befallen his family back home. Since no one seemed to know their fate, he assumed they had died in the war.

One day Salva received a message from his cousin that his dad was very sick back home. He was a patient in a health centre supported by the UN.

"It was the first time in years to hear about a member of my family," recalled Salva. "I was excited—even though my father was very ill, at least he was alive." He travelled back home and was eventually reunited with his family.

He learned that his father had fallen sick from drinking dirty water. This triggered Salva's resolve to help his village get clean water to drink. When he returned to the United States in 2003, he started Water for South Sudan (WSS), a nonprofit organization, together with his partner from the Nuer ethnic group, a rival of Salva's Dinka group. Through the NGO, Salva raised funds and sank the first borehole in his village in 2005.

"The change was immediate. Women and girls no longer trekked for hours in unsafe terrain in search of water," Salva told *Africa Renewal*.

Having seen how the project had transformed the lives of people in his village, Salva felt the need to do more. It costs from $8,000 to $15,000 to sink a borehole in South Sudan, and all the equipment is imported.

Back in the United States, Salva shared his story with friends, members of the Rochester church and others who contributed to his cause. He received small grants from various faith-based organizations, from Rotary International and from sales of a novel based on his life journey—A Long Walk to Water, a *New York Times* best-seller written by Linda Sue Park, which is read by seventh graders in American schools. Many students have contributed to the project.

The change was immediate. Women and girls no longer trekked for hours in unsafe terrain in search of water.

"We have supporters in all 50 US states and in 33 other countries, among them Australia, Canada, Czech Republic, Italy, Japan, Malaysia, Mexico, Singapore, United Arab Emirates, and the United Kingdom, because of the book. Many international schools worldwide read it," said Salva.

By March 2017 Salva's organization had drilled 300 wells in South Sudan. Experts are involved in the project to ensure the boreholes are far enough apart to keep the water aquifers sustainable, usually not less than 100 miles. The borehole water is then treated and used for drinking, domestic use and watering cattle, but not for irrigation or other large-scale purposes.

For the project to be popularly accepted, Water for South Sudan involves local communities from the planning stages. To avoid conflicts, disagreements and misunderstandings, the organization also engages local leaders and elders to decide the location of future boreholes.

We also train the villagers on how to operate the boreholes, and they are part of the committee that is charged with overseeing maintenance and repair of the equipment," he said.

This year Salva's team plans to drill up to 40 new boreholes in Waubaai County in Wau State and in Kuac North County in Gogrial State. They will focus more on schools and the new county headquarters in Payam.

Salva says that wherever the boreholes are sunk, schools and markets spring up, transforming the area and changing livelihoods. It is this kind of transformation that keeps Salva energized and the WSS project strong. A board of 14 directors in the United States, all volunteers, helps with strategic planning. The organization has three full-time and one part-time employee. Salva is based in South Sudan.

Lynn Malooly, who has been WSS executive director for the last seven years, says, "We are proud to be helping Salva and to be part of this."

For the team, though, it has not been an easy ride. Transportation of borehole equipment from one part of the country to the other is often impeded by the frequent conflicts in South Sudan, as well as poor infrastructure.

"Oftentimes there are neither existing roads nor gas stations where we can refuel the trucks transporting the machines," said Salva.

Extreme weather conditions, with temperatures rising up to a punishing 38°C, and the outbreak of malaria during the rainy season also affect the pace of the work, but do not stop it entirely.

## Future plans

Salva plans to seek more partnerships to help many more people in South Sudan get access to clean drinking water. He hopes his water project will help foster peace and bring together the warring ethnic groups of Nuers and Dinkas for the sake of developing their country.

"We are one people no matter what. We have to work together. When I go back and see all these positive changes, I feel good. We are just planting a seed and you never know what that seed could turn out to be in the future," he said.

At the end of the day, the "lost boy" of South Sudan has come home bearing gifts, and his people are grateful.

# Urban growth a boon for Africa's industrialization

## The 2017 Economic Report on Africa calls for harnessing urban growth

BY **FRANCK KUWONU**

*An administrative building at the new Diamniadio industrial park in Dakar, Senegal.* Reuters/Nellie Peyton

There has been much talk about Africa's urban dividends—the increased prosperity and sustained socioeconomic development resulting from the expansion and industrialization of African cities.

Yet such dividends can be derived only from governments' deliberate planning and management of cities. That is the essential wisdom shared in the 2017 Economic Report on Africa (ERA), written by experts at the United Nations Economic Commission for Africa (ECA).

The report, titled *Urbanization and Industrialization for Africa's Transformation*, is the fifth in as many years to highlight the need for structural transformation in Africa through industrialization.

### Rural-to-urban migration

Two years ago the ECA called on governments to use smart trade policies to advance industrial goals. Last year the report argued for "green industrialization," urging countries to infuse green initiatives into value-chain activities, especially during the process of transforming raw materials into finished products.

The 2017 report, launched in Dakar, Senegal, in March 2017, was one of the high-level events marking "Africa Development Week." The purpose of the report is to "assist governments and policy makers with strategies to harness urban growth and advance Africa's industrialization," says Adam Elhiraika, the director of the Macroeconomic Policy Division at the ECA.

Experts calling for increased attention to management and planning of cities often

refer to a UN report that highlights the fact that 4 out of 10 people in Africa currently live in cities. With an annual urban growth rate of 3.4%, that number will rise to 5 out 10 in about 18 years, meaning that by 2035 half of the continent's population will live in cities.

Such urban growth can be explained by rural dwellers' migration to the cities in search of better economic opportunities and access to essential services.

But these population movements from rural to urban areas are rarely properly managed, and cities are often unable to provide residents with such public amenities as housing, water, electricity, health, education, sanitation and jobs, to name a few.

Traditionally, urban growth in developing countries is seen more as a challenge than an opportunity, Pierre Goudiaby Atepa, a prominent Senegalese architect, told *Africa Renewal*. "It doesn't have to be like this forever," he said.

Some governments have responded to urban population pressures by building new cities, such as Diamniadio in Senegal, or rehabilitating older cities, such as Kigali in Rwanda.

## Urbanization and industrialization

The 2017 ERA does not, however, advocate the creation of new urban centres to solve the problems associated with urbanization. Instead the report points out the need for governments to plan "urban and industrial development through deliberate policies and investments as a priority for the sustainability of both cities and industries."

In other words, according to the report, urbanization and industrialization should go together. "History and experience demonstrate that urbanization is closely linked to economic growth and the transformation of economies towards productive sectors, namely industries and services."

The idea that African cities and towns could be engines of economic growth and social development is not entirely new. Five years ago the African Development Bank pointed out that 55% of the continent's GDP comes from cities. In South Africa more than three-quarters of GDP comes from "metropolitan and other large urban municipalities," according to Lungisa Fuzile, South Africa's former director-general of the treasury.

In 2015 the Mo Ibrahim Foundation referred to selected non-African countries to argue that there is a correlation between urban growth and increase in GDP per capita. The foundation's report, *African Urban Dynamics 2015: Facts and Figures*, demonstrates "a consistent link between a country's level of urbanization and its GDP per capita," although such a link remains relatively and historically low in African countries, with the exceptions of Morocco, South Africa and a few other cities.

## Colonial legacy

That African cities are not contributing enough to GDP may be explained in historical and geographical contexts. Africa's major cities, for example, were located by the European colonial powers along the coast for the easy removal of raw materials by sea, or inland near the sources of those materials.

The colonial legacy continues to overshadow Africa's current economic reality, which has remained tied in large part to the extractive industries. For years the ECA and a variety of experts have urged African countries to use value addition to raw materials sourced locally as a vehicle for industrialization.

The Asian experience demonstrates that structurally and historically, urbanisation is a by-product of agricultural or industrial productivity growth. However, the problem with Africa is that countries with low productivity growth also appear to be witnessing urban growth, but without structural transformation.

"In some African countries, urbanization has been driven by the effect of natural resource endowments rather than industrialization," the Mo Ibrahim Foundation underscored in its 2015 report.

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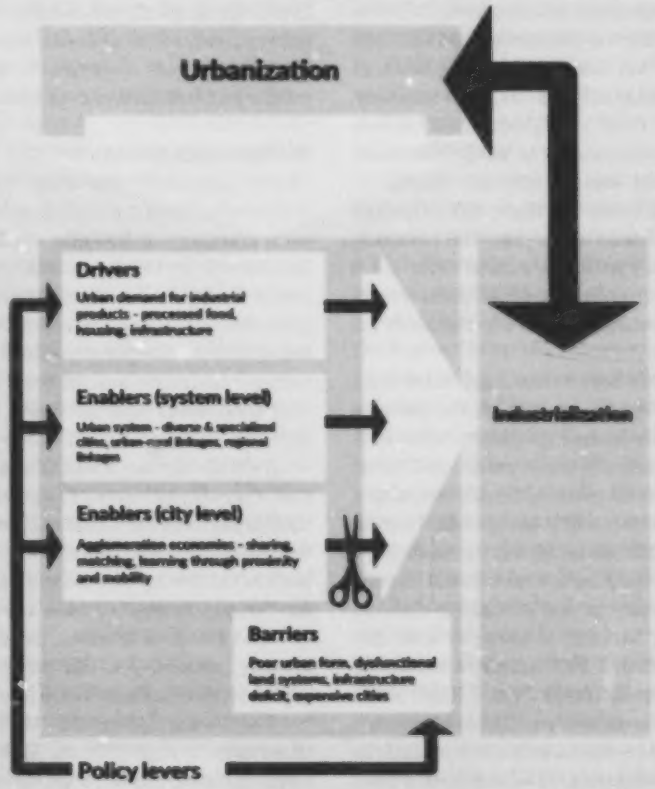
## The urbanization–industrialization nexus


Urbanization
Drivers
Urban demand for industrial products - processed food, housing, infrastructure
Enablers (system level)
Urban system - diverse & specialized cities, urban-rural linkages, regional linkages
Enablers (city level)
Agglomeration economies - sharing, matching, learning through proximity and mobility
Barriers
Poor urban form, dysfunctional land systems, infrastructure deficit, expensive cities
Industrialization
Policy levers

*Source: United Nations Economic Commission for Africa*

ECONOMIC DEVELOPMENT

# Africa's quest for a cashless economy gains momentum

## Insufficient financial inclusion, unbanked masses and financial literacy are increasingly attracting investors

BY **KINGSLEY IGHOBOR**

When she needed to transfer money to a friend in a faraway village last March, Mouna Ahmed, a gender equality activist in Liberia, did not have to worry about long bank queues and complex paperwork. Instead she took her phone, tapped on the mobile money app, punched in an amount and pressed the send button. Minutes later, her friend acknowledged the kind gesture.

"Transferring the money took less than a minute," Ms. Ahmed told *Africa Renewal*.

A leading Liberian telecom company, Lonestar Cell MTN, launched mobile money in the country in 2013. Since then, Ms. Ahmed says, "I pay my electricity, water and cable television bills through my cell phone." Last year, the company announced it will offer transfers in both US and Liberian dollars—a relief for customers who must currently use the US dollar for payments.

Liberians haven't had much experience with cashless payment methods, particularly mobile money (popularly known as "mobile wallet"); even credit and debit cards are little used. Although businesses and individuals still issue age-old cheques, mobile wallet use is steadily increasing.

Unlike in Liberia, where mobile money is the primary means of making cashless payments, Rwanda is using several different methods. The country's ambitious Smart Rwanda Master Plan (SRMP) seeks to digitize all government financial transactions by 2018, which will allow citizens to make online payments as well as use debit and credit cards for services in health care, finance and education, among other areas.

This strategy is an offshoot of Rwanda's Vision 2020, a government blueprint designed in 2000 for achieving a knowledge-based economy (in which growth depends more on information than on production) and leading the country to the middle-income bracket by 2020.

Already most bus operators in Kigali, Rwanda's capital city, accept prepaid cards. Thousands of commuters riding swanky city buses need only swipe a debit card on a card reader fitted on a bus dashboard before taking their seats. Gone are the days when conductors collected cash payments.

### M-Pesa sets the pace

Philip Ngarambe, the chief operations officer of AC Group, a digital payment systems company in Rwanda, explains that previously, "by the time [cash] gets to the company there are so many hands it has gone through—from the conductor to the bus driver to the person collecting it, to taking it to finance and the bank account," that businesses lost between 40% and 60% of revenues through cash pilfering.

Rwanda may be ahead of the curve in cashless commuting, but Kenya's M-Pesa, a mobile payment service launched in 2007, is acclaimed for the revolutionary impact it has had on society. M-Pesa (a Swahili word for "mobile money") allows people, even in rural areas, to transfer money to one another, make day-to-day purchases and pay for services such as electricity and water.

The Global System for Mobile Communications Association (GSMA), the London-based industry group that represents mobile operators worldwide, has lauded M-Pesa's pioneering effort for demonstrating "the potential of mobile technology to transform access to financial services in emerging markets."

Kenya, Tanzania, Uganda, Côte d'Ivoire, Egypt, Nigeria and South Africa are also bellwethers of cashless payment use in Africa, according to GSMA.

The Egyptian government, in collaboration with MasterCard and the Egyptian Banks Company (EBC), is working on a similar project that will allow 50 million citizens to use a single mobile payments gateway. The gateway will link citizens' national IDs to a digital system, which means all those in the financial mainstream—suppliers, distributions, customers, government and so on—can transact with one another.

Similarly, the Nigerian government and MasterCard are planning a national ID programme with biometric functionality that citizens can use to pay for goods and services and to receive salaries. That project, targeting 100 million citizens, will be the largest of its kind on the continent.

### Tantalizing investment opportunity

A pan-African bank, Ecobank, and MasterCard have set their sights on 100 million customers in 33 African countries (including Nigeria, Kenya, Uganda, Tanzania and Rwanda) with a service dubbed Masterpass Quick Response (QR). Masterpass QR is a digital system that enables customers to make online and in-store payments. In-store customers can make payments by scanning a QR bar code downloaded on a mobile device.

*An advertisement for a mobile phone money transfer company hangs over stalls of fruit and vegetables at a covered market in Kigali, Rwanda.*
Panos/Sven Torfinn

Paradoxically, Africa's lack of financial inclusion—the slow adoption of tools of global commerce, such as banking and financial literacy—has proved attractive to investors. About 90% of retail transactions in sub-Saharan Africa are cash based, while just 34% of adults have traditional bank accounts, according to the World Bank—suggesting tantalizing potential for investors.

More than 500 million Africans currently use mobile phones; according to GSMA's 2016 annual report, that number will rise to 725 million by 2020, while 84 million have active mobile money accounts. That report also notes the use of mobile money in 31 African countries.

Mobile money transactions in sub-Saharan Africa could exceed $1.3 billion by 2019, according to data by the consulting firm Frost & Sullivan. Experts forecast that the increasing number of mobile subscribers will inevitably lead to an increase in the mobile money market.

Also on investors' radar is the $62 billion per year—and growing—of international remittances to Africa, which a company like WorldRemit, an international money transfer enterprise founded by Somaliland's Ismail Ahmed, has successfully targeted. Unlike the big global money transfer companies such as Western Union that mostly require receivers to pick up cash from banks, WorldRemit enables African immigrants in Europe and North America to use their debit or credit cards to send money directly to recipients' bank accounts or mobile wallets in Africa.

"I send money to my folks in Ghana every month. I use WorldRemit," says Naa Atswei Kodia, a Ghanaian living in the United States.

For individuals, digital payments save time; for businesses, they send monies seamlessly into accounts; and even government transparency and accountability credentials are enhanced with digital payments. "The use of smart cards...also protects the environment, as there are no longer paper tickets littering [Kigali]," adds Mr. Ngarambe.

In Rwanda, electronic payments have reduced the birth registration time from six hours to 40 minutes, reports GSMA. In Tanzania, paying a vehicle license fee now takes an hour, instead of a whole day, as was the case previously.

Less cash leads to less crime, researchers say. A study by William Jack and Tavneet Suri titled, *Mobile Money: the Economics of M-PESA*, published by the National Bureau of Economic Research, a US-based nonprofit research organization, found that a few months after M-Pesa debuted, consumers cited personal safety and security as reasons for using the service.

## Benefits

Jude Onwuegbuzie, a Nigerian businessman and legal practitioner, told *Africa Renewal*, "These days, people traveling between cities don't carry cash, so highway robberies are no longer lucrative in Nigeria."

The United States Agency for International Development (USAID), the foreign aid arm of the US government, touts success in partnering with the Liberian government to implement the Mobile Solutions Technical Assistance and Research (mSTAR) project, which enables teachers in Nimba County in northern Liberia to receive monthly salaries paid in the capital, Monrovia, through their phones.

"The mobile money payment eliminated time away from their classrooms and reduced costs to receive their salaries by 84%," USAID states on its website.

Mobile money moves the poor from the informal to the formal financial sector. With 40.5% of its GDP in the informal sector, Africa has the highest rate of the shadow economy, according to the World Bank. By comparison, the figure is 16% for countries in the Organisation for Economic Co-operation and Development (OECD). "Payments provided via an account can provide the on-ramp to financial inclusion," maintains the World Bank.

## Digital payments and SDGs

GSMA considers mobile payments relevant to 11 Sustainable Development Goals (SDGs), including SDG 1, because it helps to eliminate extreme poverty; SDG 5, because financial services empower women economically; and SDG 9, because digital payments and access to credit services lead to new industries.

But regulatory bottlenecks often slow progress in the cashless payment industry. A lack of interoperability among mobile transactions in some countries, meaning individuals cannot transact across carriers, is a problem, says Daniel Monehin, MasterCard's division president for sub-Saharan Africa. In Liberia, for instance, Ms. Ahmed says that she cannot send money to people on another mobile phone network.

GSMA advises countries to allow banks and nonbank actors into the financial sector and advises providers to focus on "operational efficiency."

Nigeria penalizes certain amounts of cash withdrawals, which encourages people to make cashless transactions. That policy will help modernize Nigeria's payment system, says GSMA.

Still, Neal Estey, a former director of the Boston University's Center for Finance, Law and Policy, is circumspect about digital payments. Mobile money "should not be sold as a miracle cure for financial inclusion," he argues, because people in developing countries who use mobile money instead of opening bank accounts cannot build a financial record, have no credit ratings and do not enjoy the benefits of banking.

But banks hungry for good returns are feeling the winds of change, which is why many are already partnering with credit card and mobile payment companies.

"The future of mobile banking will sooner or later belong to the banks," says Sunil Sachdev, CEO and chief business development officer of Meed, a US-based mobile financial services company.

INTERVIEW

# Global economic gravity rapidly pulling towards Africa

— Abdoulaye Mar Dieye

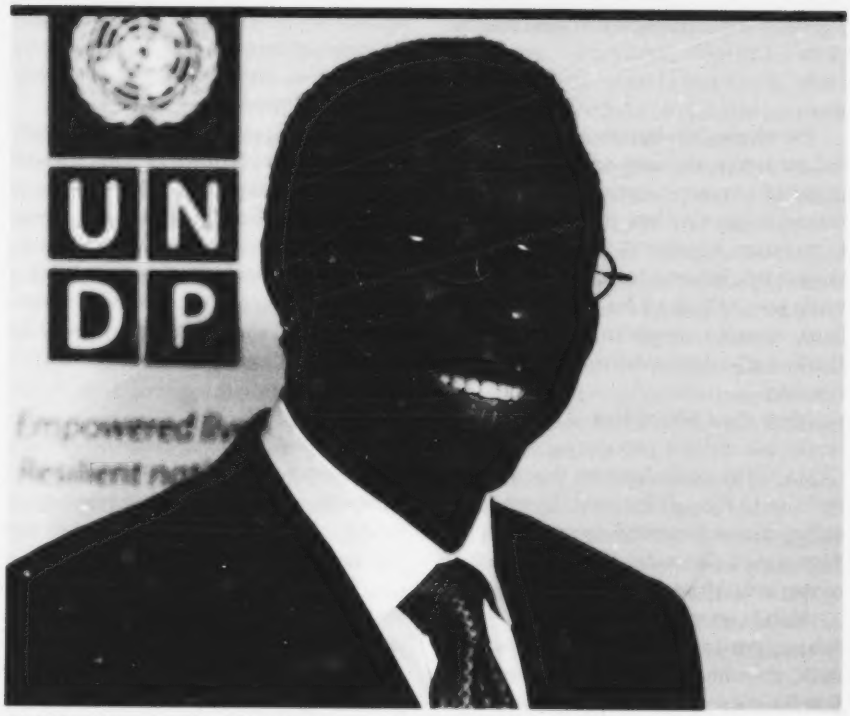
The second International Conference on the Emergence of Africa (ICEA) was held in Abidjan, Côte d'Ivoire, in March 2017. Since the first conference in 2015—at a time of robust economic growth on the continent—hopes for economic progress have dimmed because of a crash in the price of commodities, volatile global financial markets and a slowdown in global growth. Before departing New York to attend the second ICEA conference, jointly organized by the World Bank, the African Development Bank and the United Nations Development Programme (UNDP), Assistant Secretary-General of the UN and head of UNDP's Regional Bureau for Africa **Abdoulaye Mar Dieye** sat down for an interview with *Africa Renewal*'s **Kingsley Ighobor** to talk about Africa's economic development opportunities and challenges.

**Africa Renewal: Why have you organized the International Conference on the Emergence of Africa?**

**Mr. Dieye:** In 2015, when the first conference took place in Abidjan, Africa's GDP was growing at around 5% since 2000. The Economist in 2000 had called Africa the "hopeless continent." Ten years later it apologetically referred to Africa as the "rising continent." Then the [economic indicators] were changing in terms of growth rate, poverty reduction and human development. I had a discussion with President Alassane Ouattara of Côte d'Ivoire, and we agreed to capitalize on the emerging new spirit and organize a conference to study the reality of the narrative. How do we consolidate and sustain that emerging trajectory? That was the rationale behind the conference.

**Given current economic headwinds, triggered mainly by the crash in commodity prices, can you still say Africa is emerging?**

Yes. The analysis shows that one-third of the 5% growth was triggered by the emerging middle class and one-third by better economic and political governance. Only one-third is explained by the rise in commodity prices. The average growth rate from 2000 to 2015 was 5% in real GDP terms. Now it is between 2% and 3%. Don't be fooled by the tyranny of the average. Some countries are still growing at more than 5%, for example Ethiopia, Rwanda, Tanzania, Côte d'Ivoire and Uganda. Some have been badly affected by the commodity prices, especially those producing oil, for example Nigeria, Gabon, Equatorial Guinea and Angola. Those are the ones whose growth rates have decelerated substantially, particularly Equatorial Guinea. Countries in conflict such as South Sudan and the Central African Republic also contributed to the continental economic growth downturn. But some countries are continuing on the path of emergence. Côte d'Ivoire is almost growing at double digits. Rwanda and Senegal are growing at more than 6%. Therefore, the narrative is still right, but you have different situations in the growth path.




*Abdoulaye Mar Dieye, head of UNDP's Regional Bureau for Africa.* UNDP/Freya Morales

**How do you achieve the equilibrium when countries with varying growth rates sit to discuss common economic issues?**
They have some commonalities. Even countries like Ethiopia, Côte d'Ivoire and Senegal that have high growth rates still see areas for more investment to sustain growth.

**Such as?**
Such as structural economic transformations. For instance, the cocoa value chain has an average of 15% retained in the continent, while 85% is outside the continent. You can't sustain development on that path. So how do you improve transformation of raw materials in the country before export? And you cannot do structural transformation without an increase in productivity.

**Many conferences take place on the continent. Critics call them talk shops. How is this one different?**
In Abidjan [in 2015] we wanted to test the model that we offered: a developmental state that helps change the pattern of production and consumption but also impacts human development. We have done some calculations on elasticity. The Abidjan One—I call it the Abidjan One model—seeks to enforce a developmental state through a wider fiscal space to drive development and to rely on internal resources, instead of ODA [official development assistance]. You cannot sustain a development path if you don't consume what you produce locally, if you do not expand the value you retain internally, and if growth is not impacting human development. You need regional cooperation because our economies are extremely narrow in size. In the longer term you need to have inclusive dialogue. In Africa, whenever you have a change in leadership, there's a change in plan. These are the main messages sought to pass across to top-level policymakers in Africa, in addition to bringing experts from all over the world to share experiences on how to consolidate and sustain emergence.

**Do you believe in what some experts refer to as "sophisticated protectionism," which is basically formulating policies that protect local industries?**
I don't think so. Protectionism is in the past. I believe in economic patriotism, which is completely different.

**How do you ensure economic patriotism, which I presume is patronizing locally produced goods and services, if the local population prefers imported items?**
The government should start economic patriotism. I am mystified that some ministries in Africa import furniture from Germany, France or the UK. We have to use our local enterprises.

**Where has economic patriotism worked?**
Nigeria and Kenya have local content policies, both in the procurement of goods and in giving preference to local entrepreneurship.

**How can there be enhanced levels of regional cooperation when intra-Africa trade is only about 11%?**
Some regions are doing better, like ECOWAS [the Economic Community of West African States]. SADC [the Southern African Development Community] is getting better lately. There are barriers you have to deal with, including in infrastructure. The market is booming between Ghana and Togo in West Africa, although the facilitation is not there. The people are yearning for integration but the states and governments are lagging behind. Where we have a better climate of peace and security, the people trade and cooperate with one another more than in situations where you have insecurity, like in the central African region.

**Does Africa have enough domestic resources to mobilise for development? If so, which ones?**
Absolutely! Most of Africa's developing economies were funded in the past by ODA. Today even the remittances are trumping ODA. ODA in Africa is below $60 billion per year and remittances are up from $62 billion to $65 billion. We have a study by former South African President Thabo Mbeki's group [the African Union's High Level Panel on Illicit Financial Flows from Africa] that shows that the continent is losing yearly between $50 billion and $60 billion due to illicit financial flows. That is 3% of GDP lost. Now, if we enhance good governance, stronger control of corruption, we will retain that amount.

**What is the impact of climate change on African economies?**
There is a huge impact. Africa is the least polluting region, but we are bearing the pollution burden. Africa deserves more resources for adaptation. I'm glad that African countries have identified their Intended Nationally Determined Contributions (INDCs). UNDP is supporting countries to implement INDCs and plans for adaptation that came out after the Paris Agreement. Most African countries are also candidates for the green climate fund.

**How do you convince a government dealing with acute poverty to spend money on climate change?**
Climate change is a global public good. It means everyone has to foot the bill. And the greatest polluters have to spend more, including the US, China and others.

**A lack of financial inclusion disproportionately affects African women, experts say. What's the solution?**
Our latest Africa Human Development Report shows that by not including women in the development process, Africa lost an annual average of $95 billion, peaking at $104 billion in 2014. That's 6% of GDP. The paradox is that our banks have money. We are not using it. UNDP and the AfDB are advocating for countries to invest in women to cure this syndrome of exclusion, which is also bad economics. Investments in women easily double GDP growth rates and improve the wellbeing of the society at large.

**There is a sociocultural subtext, including barriers associated with patriarchy. How do you break such barriers?**
Economic policy can only work when you get the political economy right. And you're correct to say that in Africa we have some cultural norms that are barriers to women's development. In some countries, women cannot access or possess land to use as collateral for loans. So we need to work with community leaders, civil society and others to break these cultural barriers.

**Is there a country where women's empowerment has led to economic development?**
Seychelles, Rwanda and Senegal are some examples. In these countries you see improving economic development.

**see page 39**

# Disaster insurance against climate change attracts African countries

## Innovative risk-pooling initiative will give a lifeline to countries in distress

BY **BILL HINCHBERGER**

When disaster strikes in Africa, humanitarian aid can take months to reach people on the ground. By then a lot of damage may have been done. During a drought, for example, small-scale farmers facing a sequence of harsh dry seasons may sell their cattle and pull their children out of school. A quicker response could minimize the long-term effects of such a crisis.

To address the problem of slow response to disasters, international development practitioners are advocating for "resilience building," a term that refers to efforts to help communities brace for extreme events before they happen.

The goal is "to move away from disaster response and shift the conversation to one that is more proactive," says Dolika Banda, a Zambian economist who was recently named chief executive officer of African Risk Capacity, Limited (ARC Ltd).

"The continent needs to move from an *ex post* humanitarian response to *ex ante* preparation and disaster management plans," says Ms. Banda.

ARC Ltd is the private-sector arm of the ARC Agency, established as a specialized agency of the African Union (AU) to help Member States improve their capacities to plan for and respond to extreme weather events and natural disasters, therefore protecting the food security of their vulnerable populations, according to their website. It was launched by a 2012 treaty with 32 signatories and joins a small but growing group of "risk pooling" initiatives around the world (others are the Caribbean Catastrophe Risk Insurance Facility and the Pacific Risk Pool).

ARC's plan works like orthodox insurance; think of homeowners who must install smoke detectors to get fire coverage. If the detectors prove insufficient and everything goes up in flames, a system is in place for prompt payouts.

"As a technician, my message is that we cannot depend on nature," said Hastings Ngoma, the government coordinator for ARC Malawi. "We need risk management."

ARC promotes the value of insurance coverage to national leaders, advising countries to develop contingency plans before they purchase coverage. This encourages preparedness and makes sure countries know what to expect as they pay for the premiums.

ARC uses a straightforward, novel system called *parametric insurance* to determine payouts. Under the parametric insurance policies, payouts are made when a predetermined threshold is reached—for instance, if rainfall falls below a certain level.

### Customized policies

"You need to reach the trigger," says Ms. Banda. ARC and countries have to jointly develop customized policies that assure a payout when one is needed, she added.

The organization's original capital infusion was a loan. Opening shop in 2014 with drought coverage, ARC marked its inaugural period with $26 million in payouts to Mauritania, Niger and Senegal. More recently, Malawi has qualified for $8 million in cash.

The ARC brain trust has calculated that a dollar in premiums translates into at least five dollars' worth of traditional response—with quicker delivery. ARC aims to cut down its current payout response time of six weeks, but even six weeks outpaces the United Nations' response in providing relief supplies for the Sahel.

Eight countries, including Kenya, Malawi and Zimbabwe, have taken drought insurance in ARC's first three years in operation. Total coverage in the second year for seven nations was $178 million. Six countries (Burkina Faso, the Gambia,

***A flooded road.*** AMCV/B. Karlie

Mali, Mauritania, Niger, and Senegal) are currently on board for the annual period that runs through mid-2017.

ARC emerged partly in response to concerns about the often delayed and high cost of response of the UN's World Food Programme (WFP) and donor countries when providing humanitarian relief. The German development bank KfW and a UK aid agency, the Department for International Development, laid down a $200 million interest-free, 20-year loan as seed capital.

Donor and WFP support for ARC is expected to continue. During the COP21 climate summit in December 2015, ARC announced more than $150 million in new pledges from countries including Canada, France, Germany, United Kingdom and the United States.

Last year the WFP announced collaboration with ARC to extend disaster insurance coverage to more African countries, partly thanks to European donors. The WFP's replica insurance programme will match outlays for countries that consistently invest in insurance premiums via ARC. The UN agency hopes that by 2030 insurance will finance half its natural disaster aid expenditures in Africa and Asia.

"WFP is transforming the way we assist vulnerable communities to cope with natural disasters, from disaster response to risk management," said WFP executive director Ertharin Cousin during the World Humanitarian Summit in Istanbul last year. "Countries themselves need to own and manage their disaster risk, first and foremost."

To make sure that it can make good on any and all claims, ARC has its own insurance, spreading its risk among many of the world's top reinsurance companies, including such big names as Munich Re.

## Reinsurance companies

The number of reinsurers that back ARC's portfolio stands at 24, twice the number that signed on at the beginning in 2014. "They needed us more than we needed them," says Simon Young, former head of ARC, Ms. Banda's predecessor. Mr. Young remains in an advisory capacity.

Big insurers have been trying to tap the African market for years, without much success. "ARC is a really nice vehicle for them to get a lot of risk in a nicely packaged way," says Mr. Young.

Using this leverage, ARC Ltd. can negotiate favorable prices, Mr. Young noted. The appetite among reinsurers is sufficient to cover ARC Ltd.'s needs "many times over," observes an insurance industry insider who preferred to remain anonymous.

ARC Ltd. hopes to provide up to $1.5 billion of coverage for 150 million people against drought, floods and cyclones in 30 countries by 2020. Sixteen countries have signed memorandums of understanding, a key step toward obtaining coverage.

Cyclone and flood programmes are in the research and development phase, a process that includes number crunching to make sure that necessary parameters and triggers are fairly calculated and correctly measured.

Indian Ocean countries such as Madagascar have expressed interest in cyclone coverage, notes Ms. Banda. It is due to be rolled out later this year. Several donors appear ready to help launch the flood scheme.

To ensure that payouts are used for disaster-mitigation purposes, ARC Ltd. plans to establish parameters for aid distribution and a monitoring system. "We need a foolproof methodology for the traceability of payouts," says Ms. Banda, adding that one of her goals is to have African governments feel that the programme is theirs.

Beyond its current drought coverage, ARC Ltd could be well placed for expansion. But in an era of ever-tightening public budgets, national leaders also need to be convinced to shell out cash for premiums.

"We need to work with host countries in terms of financial trade-offs with respect to premium affordability," said Ms. Banda.

The lack of deeply-rooted insurance markets also seems to present a barrier to many African countries. Of all premiums in sub-Saharan Africa, 80% are concentrated in South Africa. "Insurance is a relatively new sector," observes Mr. Ngoma. "We don't have a culture of insurance."

However, South Africa's dominance is set to be challenged by a number of promising countries. Nigeria tops the list, with Kenya and Ethiopia showing significant growth in insurance markets on the continent.

This is "something [leaders] never considered paying for before," according to Mr. Young.

Malawi was among the first countries to sign on, partly due to its experience with a World Bank pilot programme for drought insurance in 2008–2011, noted Mr. Ngoma. "Our current minister of finance is an economist. He understands the advantages."

To prime the pump for those not yet convinced, international donors and institutions such as the African Development Bank may be willing to subsidize premiums for a while, Ms. Banda notes, while cautioning the need to gradually reduce the role of outsiders. "The original concept behind ARC was that over time it would be mutually owned by the sovereigns of Africa."

# Young South Africans investing in lucrative renewable energy sector

## Pele Energy Group joins the league of independent power producers

BY **TSIDI BISHOP**

Fumani Mthembi, who runs a renewable energy producing company in South Africa, has no regrets about leaving her secure job in the middle of an economic recession to start her own business in 2009.

Ms. Mthembi and four of her friends, barely in their thirties at the time, left the banking industry to start a development project to help less privileged youth in the country. However, they were forced to change their plans when they struggled to raise funds to run the programme. They opted for renewable energy.

In an interview with *Africa Renewal*, Ms. Mthembi, the only woman among the five founders (the others being Gqi Raoleka, Obakeng Moloabi, Boipelo Moloabi and Thapelo Motlogeloa), said that while they were battling to keep their dreams alive with the youth project, another opportunity presented itself, which led to the creation in 2009 of the Pele Energy Group (PEG), based in Sandton, Johannesburg.

South Africa's Energy Department was searching for independent power producers for renewable energy. Companies had to meet a few criteria to be considered. First, they were required to have the financial muscle and expertise to run a business and also have a solid social development strategy for communities where they would be constructing energy plants. Of importance also were the company's plans to raise capital and its technical expertise in producing energy. The department was also looking for technical expertise and hence worked with independent power producers that had that expertise.

"This was actually representing an opportunity for us because we had skill sets that we gained from our days in the banking sector that would enable us to make sense of what was required by the Energy Department," said Ms. Mthembi.

***Fumani Mthembi, one of the founders of Pele Energy Group.*** *Tsidi Bishop*

"So it was clear that, as someone with an economics and development background and as an economist, I could plug in. We had community development skills, we had a plan on job creation and on how we were going to raise capital to finance our equity positions in these projects," said Ms. Mthembi, who was just 25 at the time, with a bachelor's degree in economics and politics and a master's in politics and development from the University of Sussex in the UK.

Pele Energy Group's first break came in November 2011, when it successfully bid to become one of the independent power producers.

One of its first big projects was a power plant producing 36 megawatts of solar CPV (concentrator photovoltaics) in the Eastern Cape Province.

However, the company's good fortune was short lived. In 2012 all its bids failed, so the company generated income through consulting. It did research on the townships and rural areas where there was a need for development, and then used that information to advise clients on where to invest their money. Among

other things, Pele would help companies assess the best size for a project in a given community.

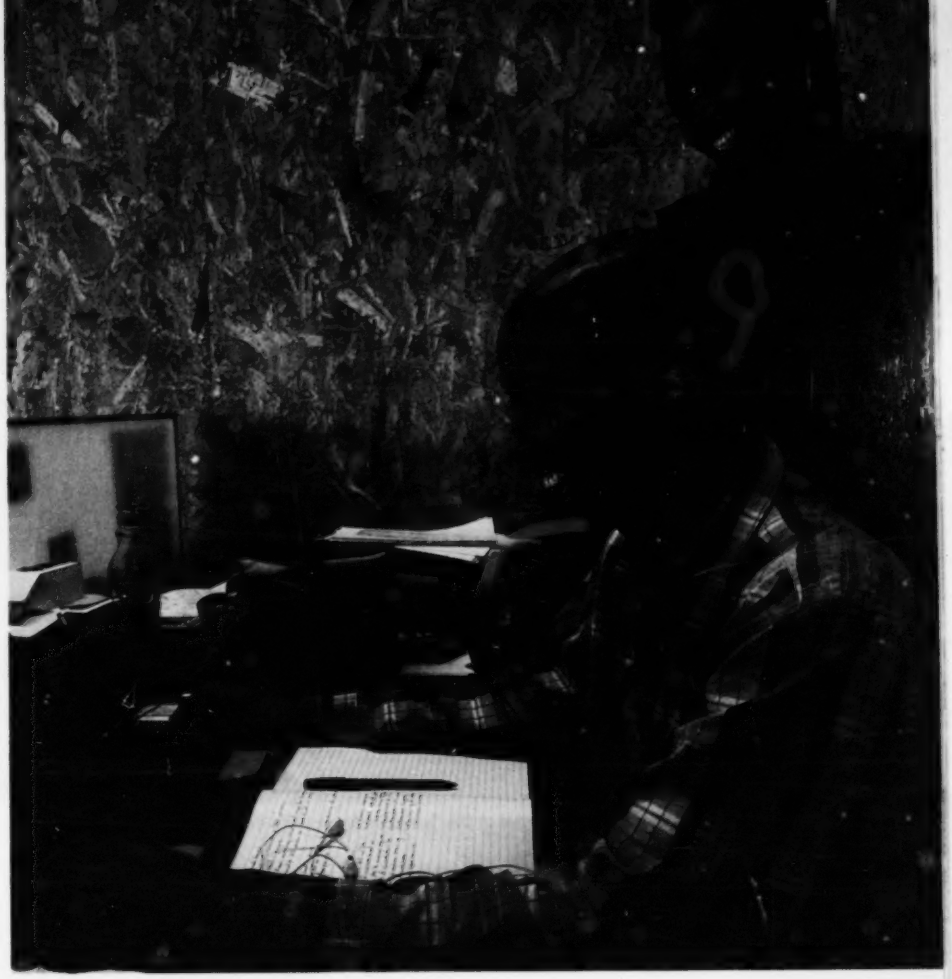
"We were doing everything to get noticed. We were willing to get our hands dirty," said Ms. Mthembi, adding, "We did hard ground work which involved printing reams of paper for procurement submissions, finding information, talking to banks about the funding, interfacing with law firms to negotiate contracts. Our business even today is not funded by anyone but us; everything we have is from our sweat."

This was a difficult period for the group. The founders had put all their savings in the company and had gone for months without pay. It was also imperative to find foreign partners with a winning formula. In South Africa the law encourages foreign companies to partner with local firms in this sector. Outsiders may hold majority stakes.

"The quality of the people on the other side is important because they own 60% of the project, so we had to figure out our own value and start to tailor things according to our intrinsic attributes. But 2012 was a tough year because all of a sudden, all that momentum that we had gained felt like it was slipping away," she says.

The group's fortunes began to improve in 2013 after the founders made some strategic changes to the business structure. They divided it into three specialised entities—Pele Green Energy (an independent producer of renewable energy), Pele Natural Energy (which produces conventional fuels) and Knowledge Pele (a research and development implementation firm).

Soon after the changes, the group won a number of government procurement bids. Pele Green Energy, together with an Italian contractor, currently owns and operates generation facilities for 884 megawatts of solar and wind power. These include the Tom Burke Solar Park and Paleshuiwel photovoltaic power plant in Limpopo Province. Some of Pele's wind and solar plants are in the Western and Northern Cape provinces.



***Ms. Mthembi and her colleague at work.*** *Tsidi Bishop*

Pele soon expanded beyond South Africa. Pele Natural Energy is co-owner of a natural gas-fired power plant in Mozambique. The expansion helped the company increase its staff from five to 25 young permanent employees.

> **The quality of the people on the other side is important because they own 60% of the project, so we had to figure out our own value and start to tailor things according to our intrinsic attributes.**

Firms like Ms. Mthembi's have helped the country through difficult times. South Africa's energy monopoly, Eskom, was forced to implement scheduled blackouts—also known as load shedding—in 2008 as demand for electricity grew. Numerous outages since then have cost the economy dearly, forcing Eskom to ration electricity.

Ms. Mthembi believes the reason there was no load shedding or electricity rationing in 2016 was that renewable energy was brought into the grid. The entire sector now has 92 projects providing power to 110 rural and township communities around the country.

Last year the energy ministry announced that it had added 4,322 megawatts of renewable energy capacity to the national grid in less than four years.

Meanwhile, Pele's five founders are determined not to become just another black-owned investment holding company. "We want to develop, own and fully operate our plants," fellow founder Gqi Raoleka avers, though he acknowledges that Pele still has some way to go to achieve that aspiration.

*Baby elephants "play soccer" as they graze at the David Sheldrick Wildlife Trust in Nairobi, Kenya.* AMO/Stephen Mudiari Kasabuli

CONSERVATION

# Conservationists take aim at poachers

## Newly-created commission will gather evidence to help dismantle organized wildlife crimes

BY **BENJAMIN DUERR**

As the rate of animal poaching continues to rise, conservationists have begun calling for stronger laws and deterrents to wildlife crimes.

African governments and non-governmental organizations are starting to take wildlife crimes as seriously as other transnational crimes such as drug smuggling and human trafficking. In recent years countries have strengthened anti-poaching laws and stepped up prosecutions.

Conservation groups have begun backing new ways to deter poachers. The newly created Wildlife Justice Commission (WJC), for example, gathers evidence to disrupt and help dismantle transnational, organized wildlife crime. The WJC is based in The Hague, The Netherlands, near the International Criminal Court and several UN tribunals that try genocide, war crimes and crimes against humanity. The Commission's intelligence unit has since 2015 been gathering information to create tactical, operational and strategic intelligence assessments in support of current investigations, as well as disseminating information to law enforcement agencies and other non-governmental organizations on wildlife criminals.

The WJC team of experts in law, criminology and wildlife conducts field investigations worldwide to identify the people behind the poaching, trafficking and trading of wildlife products. In what they call "Maps of Facts"—consisting of hundreds of pages—they list the names and whereabouts of high-profile perpetrators. They publish this information on social media, along with audio and video evidence and incisive intelligence analysis.

Because it was not set up by an international treaty, the WJC cannot enforce laws itself or hand down binding verdicts. After an investigation, the commission starts a period of dialogue and diplomacy to increase awareness, put the topic on the political agenda and push for prosecutions. However, if national authorities are taking no action, the commission can hold public hearings before an accountability panel.

"I firmly believe that law enforcement can change the behaviour of people," says Olivia Swaak-Goldman, the commission's executive director.

Poaching is rampant because the probability of being caught is extremely low, Ms. Swaak-Goldman told *Africa Renewal* in an interview at her office in The Hague.

The WJC aims to encourage the prosecution of these crimes, increase risks for perpetrators and, in the long run, generate a deterrent effect.

Arrests and the disruption of wildlife smuggling networks in various African countries have resulted from this approach. However, challenges still remain. In recent years, the number of animals killed reached historic heights—a development with far-reaching consequences. For example, nearly 1,400 African rhinos were poached in 2015. In 2010 the number was about 400.

Poaching and illegal trade not only present real environmental dangers, but ultimately undermine the rule of law by potentially fueling conflict, reports the United Nations Office on Drugs and Crime (UNODC) in its first World Wildlife Crime Report, published in May 2016.

"Poaching has damaged the wildlife population in Kenya, with fears that some species could be pushed into extinction," Julius Kamau, executive director of the East African Wildlife Society, told *Africa Renewal*.

Historically, Kenya has treated poaching as a petty offence, but a law introduced in 2013 requires high minimum penalties for wildlife crimes, including imprisonment for the killing of endangered species.

"Penalties for wildlife crimes in Kenya are now the harshest in the world and even include life imprisonment in some cases," explains Paula Kahumbu of the Kenyan conservationist action group, WildlifeDirect.

Since then the number of elephant deaths from poaching in the country has decreased by 80% and the number of rhino deaths from poaching by 90%. The decline can in part be attributed to the strengthening of the laws, Ms. Kahumbu wrote in an article for the *Guardian*, a British daily.

In its report, UNODC notes that gaps in legal enforcement are facilitating wildlife crimes. "Illegal trade could be reduced if each country were to prohibit, under national law, the possession of wildlife that was illegally harvested in, or illegally traded from, anywhere else in the world," UNODC writes.

States and the international community are both increasingly recognizing the need for better laws and law enforcement.

The United Nations General Assembly in July 2015 adopted a resolution (69/314) intended to tackle illicit trafficking in wildlife. It urged member states "to take decisive steps at the national level to prevent, combat and eradicate the illegal trade in wildlife."

Several African countries have already adopted new laws or increased penalties. Mozambique enacted a new conservation law in June 2014 that makes wildlife poaching a serious crime.

In Tanzania, the National and Transnational Serious Crimes Investigation Unit (NTSCIU), an elite task force, is increasingly called in to prosecute wildlife crimes. One of NTSCIU's major successes was the arrest in August 2015 of a Chinese woman known as the "Ivory Queen," one of Africa's most notorious smugglers of ivory to Asia. She is said to have led a smuggling ring that killed animals in Africa and sold several millions of dollars' worth of tusks to East Asia.

> Poaching and illegal trade present real environmental dangers and ultimately undermine the rule of law by potentially fueling conflict.

Conservationists say they can't underscore enough the necessity of law. "Swifter prosecution with heavy penalties could play a significant role in helping deter wildlife criminals—especially if those near or at the top of the criminal hierarchy are caught," says Richard Thomas of the wildlife trade monitoring network, TRAFFIC, a global non-governmental organization based in the UK.

And African countries are enacting and enforcing such laws. In March 2016, a Tanzanian court sentenced two Chinese men to 35 years in prison for smuggling ivory. A few months earlier it had sentenced two men to 20 years in jail for smuggling rhino horn.

In South Africa, 414 poachers were arrested between January and September 2016. This marked an increase in arrests from 317 for the whole of 2015, according to Edna Molewa, the minister of water and environmental affairs.

Heavier penalties aren't a cure-all, though. "One of the major challenges of deterring poaching activities via convictions is weak evidence gathering, which has resulted in weak prosecution and lack of evidence or proof," says Mr. Kamau, the Kenyan conservationist. "This means that many offenders have gone unpunished."

In a move to address this issue, Kenya and South Africa have set up laboratories that collect DNA information in a database that links stolen ivory and game meat to specific animals. The DNA information can be used in court as watertight evidence. It can prove the link to a suspect, for example, through hairs at the crime scene or a knife with blood. Moreover, most animals appear to have been killed in few specific hotspots in Africa.

Sometimes suspects are never caught, their cases fail to come to trial or they receive penalties that are far too weak. This can be due to corruption, weak investigations or a lack of judicial appreciation of the seriousness of wildlife crime, according to Mr. Thomas of TRAFFIC.

There are cross-cultural challenges as well. If Asians are arrested, African investigators frequently struggle with interrogation due to language barriers. Mr. Thomas prescribes better collaboration between Asian and African authorities. For example, Asian countries could strategically station law enforcement personnel and let investigators call them in to support interrogators and get information from seized documents, laptops and cell phones.

Another possibility is for more countries to adopt an equivalent of the American Lacey Act, enabling them to prosecute their own citizens for wildlife crimes regardless of where the crimes were committed. "If arrested, nationals could be extradited and prosecuted in their home country—that would certainly be a game changer," says Mr. Thomas.

# Pension funds, insurance companies as key drivers of regional integration

## Survey shows regional institutional investor base expanding due to favourable demographics

BY **JOHN SCHELLHASE**

*A retired couple go through their financial files.* AMO/George Philpot

Capital markets, where money from savers is put into long-term investments, can contribute significantly to socio-economic development if they invest in productive projects and enterprises. But small size and market illiquidity can undercut this process.

The East African Community (EAC) has been prioritizing regional financial-market integration, creating linkages between the region's markets, as the combined pools of local savings, pension funds, insurance companies and other local institutional investors will be the essential drivers of capital-market development and the integration of markets in the EAC.

Institutional investors in the region are already making some intra-regional asset allocations, but there is potential for expansion, according to the Milken Institute, an economic think tank based in the United States that conducted a survey early this year of over 40 institutional investors in Kenya, Rwanda, Tanzania and Uganda. With this survey, the institute sought to examine current intra-regional investments and how their role may develop in the future.

The regional institutional investor base has been expanding lately, as favourable demographics and economic growth spur the development of local pension and insurance industries. According to national statistics, EAC pension funds and insurance companies managed $19.1 billion in assets as of 2015, up from $10.7 billion in 2010.

When it comes to investing abroad, about 50% of the firms studied allocated a portion of their portfolio to assets beyond their own country's domestic markets. Most of their foreign investments, though, stay within the regional bloc.

Ugandan institutional investors, for example, were most likely to hold foreign assets, with 70% of surveyed Ugandan funds deploying at least some capital abroad. Their main motive for doing so was to access Kenya's more developed securities markets.

"Assets outside our country are in Kenya, specifically in the equities market. Kenya is a more active economy with a liquid stock market, it is growing and we want to participate in this growth," a fund manager told the Milken Institute.

For their part, the Kenyan institutional investors that made foreign investments primarily did so to diversify their portfolios in light of domestic concerns, such as political dysfunction, budget deficits and the depreciation of the Kenyan shilling. As one survey participant explained, his fund was "diversifying away from Kenyan-specific risk."

While some Kenyan firms directed around 5% of their portfolio to securities beyond the EAC, most cross-border Kenyan investment stayed within the region. Given that Kenyan firms manage more than half of regional assets, this is an important finding for Kenya's neighbours, as well as for any long-term investments in regional infrastructure, such as projects to link the EAC's Northern Corridor.

The survey also found out that about a third of Rwandan pension funds and insurance companies invested abroad, with Kenyan markets the most common destination.

In Tanzania no participating firm held foreign assets, mainly because of long-standing regulatory restrictions on investments abroad. Some of these restrictions have only recently been lifted.

Under the 2010 EAC Common Market Protocol, Member States are required to remove all restrictions to the intra-regional movement of goods, labour and capital. Overall the EAC has made significant advances toward this goal, although some restrictions still remain, such as rules preventing Tanzanian and Ugandan insurance companies from investing in other EAC countries.

Regulations, though, are not the only obstacle to further market integration. Investment guidelines imposed by boards often place tighter restrictions on fund managers than regulations do. At the same time, investors do not always know where regulations allow them to invest. The survey showed that this lack of awareness was particularly notable among Ugandan pension funds.

Even when firms want to invest in their regional neighbours, they may be ill-prepared to manage the currency risk involved. Nearly a third of the survey respondents rated their ability to assess exchange-rate risk as "poor" or "very poor." About 73% of the firms said they lack the tools needed to hedge against negative currency movements.

## Possible futures

The survey findings indicate that institutional investors are ready to increase their intra-regional investment. First, nearly half of participating firms would be willing to increase investment in Rwanda, if they had access to better currency hedging solutions that are used to mitigate the impact of foreign exchange risk on international investments.

The new frameworks for derivatives established by Kenya and Uganda may offer firms the currency hedging instruments they need, though these instruments are not a panacea.

Another solution would be not to require hedging products at all. What if the Rwandan government, for example, were to issue bonds denominated in Kenyan shillings instead of Rwandan francs? About 75% of EAC institutional investors say they would be interested in investing in such an issuance. For Kenyan investors, this product would enable cross-border diversification without exchange-rate risk. For the Rwandans, this kind of security would likely facilitate further investment from Kenyan firms, which manage the region's largest pools of capital by far.

### By the numbers

**$19.1 Bn**
the amount in assets managed by pension funds and insurance companies in the East African Community (EAC)

**73%**
of firms lack tools need to hedge against negative currency movements

**70%**
of surveyed Ugandan funds have been invested outside the country

East African institutional investors also clearly signaled their appetite for two other new products that would drive regional integration. Nearly three-quarters of the firms surveyed would be interested in investing in a regional fund focused on infrastructure, while 64% would look to invest in a regional fund of funds for private equity and venture capital.

These kinds of funds, if they were established, would be invested in multiple projects or enterprises, thus pooling and dividing the risks among various investors. Moreover, these funds would be managed by specialists, enabling some institutional investors to access expertise they might not be able to otherwise. Donors could help facilitate the creation of such funds by providing first-loss capital —where they agree to bear first losses in the investment in order to encourage the participation of co-investors that otherwise would not have entered the deal, or other credit enhancements.

## Next steps

According to the recent EAC common market scorecard, the region is already one of the most integrated in Africa, although challenges remain.

Developing products that meet the needs of institutional investors as they look to diversify beyond their national markets would be one step toward further integrated regional capital markets. Such an approach will require constant engagement with firms to understand how and why they allocate assets. It will also require expanding awareness among fund managers and investment boards, so that they are able to take advantage of new developments as they become available.

Pooling regional institutional investor capital to finance cross-border infrastructure or invest in the region's growth-oriented small and medium-sized enterprises (SMEs) would, of course, have widespread benefits beyond financial sector development. If managed properly, these investments could further unite the economies of the EAC member states, expanding trade and spurring economic growth.

*Mr. Schellhase is a consultant at the Milken Institute Center for Financial Markets, where he researches on deepening and strengthening capital markets in developing countries.*

# ICC: Beyond the threats of withdrawal

## African countries in dilemma over whether to leave or support the International Criminal Court

BY **FRANCK KUWONU**

*People queue to enter the new headquarters of the International Criminal Court in The Hague, Netherlands.* AP/ Mike Corder

Sometime last year, three African countries—Burundi, the Gambia and South Africa—signalled their intention to leave the International Criminal Court (ICC). There was fear that more countries would follow.

After years of criticisms, it appeared as if aggrieved African countries would be making good on their repeated threats to leave the court.

In October 2016, Burundi and South Africa formally wrote to the United Nations Secretary-General to communicate their decision to withdraw from the ICC. Around the same time, The Gambia, a tiny country tucked inside Senegal off the West African coast, also indicated that it would withdraw, only to reverse course almost immediately after a newly elected government assumed power.

Since then, the feared exodus from the ICC by African countries has not materialized. Not even after the African Union (AU) reportedly agreed on a strategy calling for a collective withdrawal from the court. Meanwhile, compelled by its own courts for having failed to follow proper legal procedures, South Africa ended up revoking its notice of withdrawal in March.

### Distrust

"A bunch of useless people," Yoweri Museveni, the Ugandan president, once called the ICC, while his Rwandan counterpart, Paul Kagame, said the court was never about "justice but politics disguised as international justice."

President Uhuru Kenyatta of Kenya, who once faced indictment by the ICC, castigated the court as a "tool of global power politics and not the justice it was built to dispense."

Dissatisfaction with the court lies in the perception that the ICC has disproportionally targeted Africans and does not respect the politics and sovereignty of African countries. Nine out of the 10 cases currently before the court involve African countries.

Fatou Bensouda, the ICC prosecutor, who investigates and prosecutes crimes under the jurisdiction of the court, namely genocide, crimes against humanity, war crimes and crime of aggression, routinely dismisses those criticisms, saying that since most of the cases were initiated by the countries themselves, it makes no sense to accuse the court of bias.

Still, the court appears to be sensitive to the criticisms and has now invited scholars to debate the subject in an online forum.

After all the pronouncements and threats, however, only Burundi is on course to leave the ICC before the end of this year. Opinions are divided among African countries and among citizens within the countries advocating withdrawal. Even as the AU was reported to have adopted a mass withdrawal strategy, some countries, such as Nigeria, opposed it, particularly the idea of leaving en masse.

"Nigeria is not the only voice agitating against it; in fact, Senegal is speaking very strongly against it. Cape Verde and other countries are also against it," remarked Geoffrey Onyeama, Nigeria's foreign affairs minister, speaking at the end of the AU summit held in Addis Ababa in January. "Each country freely and willingly acceded to the treaty," he said. "So each country, if they want to withdraw, has the right to do that individually."

"Whatever problems the ICC might have don't justify its vilification," Désiré Assogbavi, a human rights activist, and a representative of Oxfam International to the African Union, told *Africa Renewal*.

Oxfam and a group of African civil society organisations that formed a global coalition for the ICC, started campaigning in 1995 for the strengthening of international justice. The coalition successfully lobbied for the adoption of the Rome Statute of the International Criminal Court in 1998, which led to the creation of the ICC in 2002.

"Granted, almost all the cases before the court were initiated by African countries themselves, including the first historic case by Uganda. [So] to now turn around and vilify the ICC smacks of hypocrisy," says Mr. Assogbavi.

Indeed, in January 2004, President Yoweri Museveni and the then ICC prosecutor Luis Moreno Ocampo appeared together at a confirmation press conference in London to announce that the ICC was going after the Lord's Resistance Army (LRA)—a vicious rebel group in conflict with the central government. Soon the Democratic Republic of the Congo would follow suit, followed by the Central African Republic, Côte d'Ivoire and Mali.

In the case of Sudan and Libya, the ICC sprang into action after both cases were referred by the United Nations Security Council, while for Kenya, the cases were opened at the initiative of the prosecutor but with the full cooperation, at least initially, of the government.

So why is the court being criticised for taking up African cases, a majority of which were instigated by the countries themselves?

At the heart of the distrust lies what Allan Ngari, a senior researcher at South Africa's Institute for Security Studies refers to as "the elephant in the room: immunity for sitting heads of states."

At one point in the short history of the court, two sitting African heads of state were indicted. Charges against Mr. Kenyatta, the Kenyan president, and his deputy William Ruto were later shelved, but Omar al-Bashir, the Sudanese president, remains under indictment, while Laurent Gbagbo, former president of Côte d'Ivoire, is currently on trial.

Burundi allegedly decided to leave the court in protest over the ICC prosecutor's move to launch investigations against its leaders. Yahya Jammeh, then the president of Gambia, may have been motivated by similar concerns. And after being censored by its own court for failing to execute an ICC arrest warrant against the Sudanese president as he visited the country, South Africa decided that it could no longer be part of the Rome Statute.

## Justice and politics

Critics of the ICC point out that both Sudan and Libya were referred to the court by the UN Security Council, where three of five veto-wielding countries (China, Russia and the United States) are not even members of the court. While the Security Council was quick to have leaders of the two countries indicted, the critics have observed that efforts to refer countries like Syria have so far been thwarted by some of these countries.

Even steadfast supporters of the court, such as former UN Secretary-General Kofi Annan, agree with some of the criticisms. Writing in the *Guardian*, a UK news publication, he acknowledged several weaknesses of the court.

"Most egregiously," Mr. Annan wrote, "only two of the five permanent members of the UN Security Council—the UK and France—are signatories to the Rome Statute [and therefore members of the ICC], open[ing] the court up to accusations of double standards."

Nonetheless, Mr. Annan strongly advocates for the continent to stay engaged with the court, saying, "ICC remains the continent's most credible court of last resort for the most serious crimes."

His views are espoused by a majority of civil society organizations in Africa, doubtful of their own governments' abilities to prosecute serious crimes, even as African Union members push for the establishment of an African Court to try international crimes.

To many observers, however, reforms may be just what aggrieved countries have been calling for all along. As early as 2013, Kenya asked for sitting presidents not to be indicted, while South Africa pressed for their immunity against prosecution to be respected.

Last year, in the aftermath of its failure to arrest the Sudanese president, the South African government indicated that the "main problem with the ICC is the obligation to arrest heads of state." That obligation, said Michael Masutha, the minister of justice, was inconsistent with the international practice of diplomatic immunity.

In March 2017, even as Pretoria revoked its notice of withdrawal, a group of South African former constitutional judges was lobbying parliament against withdrawing from the ICC.

Justice Zak Yacoob, one of the former judges, framed the issue at the time: "In joining the ICC, South Africa made the choice of saying some human rights violations are so gross, so bad, so punishable, that no leader, even if he or she was a state leader at the time, should be able to get away with it." The ICC judges allegedly said, "The ICC works within an imperfect framework. However, leading nations like South Africa and its parliamentarians should spearhead initiatives to improve the court. This is something that can only be done from within the system."

*Fatou Bensouda, ICC Prosecutor (left) and James Stewart, ICC Deputy Prosecutor.* ICC

# Gambia's democracy survives political t

## Peaceful transfer of power trending on the continent

BY **PAVITHRA RAO**

As the results of The Gambia's presidential election trickled in last December, incumbent President Yahya Jammeh realised his power was slipping away. Indeed, final results showed that a newcomer, 51-year-old businessman Adama Barrow, had garnered 45.5% of total votes, while Mr. Jammeh received 36.6%.

Mr. Jammeh unexpectedly conceded defeat and informed Mr. Barrow in a congratulatory telephone call that "the Gambian people have spoken and I have no reason to contest the will of the mighty Allah." He promised "guidance on your transition and when selecting a government," and signalled the beginning of the end of his 22-year rule.

To the surprise of many, a president who once boasted he would rule "for a billion years if Allah decrees it" was presiding over a peaceful election and transition.

The Gambia's election indicated that African democracy and obedience to the law was coming of age, analysts said. Regional bodies, the Africa Union (AU) and the Economic Community of West African States (ECOWAS) jointly congratulated the people of The Gambia "for peaceful, free, fair and transparent presidential elections."

In a joint statement, ECOWAS, AU and the UN also commended President Jammeh for gracefully conceding defeat, and also congratulated Mr. Barrow for winning the presidential election.

Nic Cheeseman, a professor of democracy at the University of Birmingham, UK, and the author of *Democracy in Africa: Successes, Failures and the Struggle for Political Reform*, summed it up: "The news out of The Gambia is a boost for African democracy. It reinforces important principles about leaders standing down after losing power."

But excitement soon evaporated, as days later, on 9 December, Mr. Jammeh cited irregularities in the election and called for its annulment. Fear of unrest, intimidation and arrest forced citizens to flee to neighbouring Senegal. One of those who fled was Mr. Barrow, the president-elect.

Human Rights Watch, a US-based non-governmental organization that promotes human rights globally, accused Jammeh of human rights abuses and urged the international community to stand by Mr. Barrow.

### Why Jammeh capitulated

There were fears that the already muddled political and security situation could deteriorate further after Mr. Barrow was sworn in at a hastily arranged ceremony without the usual fanfare in the Gambian embassy in Dakar. "This is a day no Gambian will ever forget in a lifetime," Mr. Barrow said in a speech immediately after being sworn in. "Violent change is banished forever from the political life of our country. All Gambians are therefore winners."

Intense international pressure from ECOWAS that threatened military force to bring stability to the country—from key national institutions, from Jammeh's own armed forces and from citizens who insisted on a peaceful transfer of power—prompted Jammeh to agree to vacate office. He left the country on 22 January for Malabo, the capital of Equatorial Guinea.

Experts are still debating the factors that influenced Jammeh's capitulation, and what lessons, if any, can be learned.

Despite security problems in many African countries, from the Central African Republic, the Democratic Republic of the Congo to South Sudan, the peaceful transfer of power can be seen in a few exceptional cases—a development that may have inspired Gambians to hold the line, experts say.

Some examples: In 2015, Nigeria's Goodluck Jonathan conceded defeat after voters chose opposition leader Muhammadu Buhari in the presidential poll. In December 2016, Ghanaian opposition politician Nana Akufo-Addo prevailed over incumbent President John Mahama, and a peaceful handover transpired.

Peaceful elections took place in Tanzania in November 2015 when President

# rbulence

*The Gambia's former president Yahya Jammeh (in white) prepares to depart from Banjul airport to exile in Guinea Bissau on January 21, 2017.*
Reuters/Thierry Gouegnon

Jakaya Kikwete handed over power to John Magufuli. In Somalia, Mohamed Abdullahi Mohamed, a former prime minister, defeated sitting president Hassan Sheikh Mohamud and assumed the presidency, following two rounds of voting in the capital city's heavily fortified airport. The country doesn't have universal suffrage, so the president was picked by the country's 329 lawmakers.

In The Gambia, citizens had begun mobilizing against the 55-year-old Jammeh, who seized power in 1994 in a bloodless coup. His government censored the media and was intolerant of the opposition. Journalists who dared criticise the president were jailed, while others fled into exile. International journalists were rarely given permission to enter the country.

Mr. Jammeh "did not see that his repressive practices had gradually generated a mass of popular anger, anguish, discontent and defiance," writes Baba Galleh Jallow, a Gambian journalist, who escaped to the US.

The ex-president, a homophobe, once threatened to slit the throats of gays and lesbians, and later promoted a law that dictated a life sentence for homosexuals. He referred to himself as a miracle worker with powers to cure AIDS, and left some 21,000 HIV-infected Gambians without lifesaving antiretroviral drugs.

In the three previous presidential elections, in which he managed to whip the opposition, Jammeh was accused by the opposition of widespread rigging and voter intimidation.

Regional economic and political groupings, particularly ECOWAS and the AU, as well as international organisations such as the United Nations, helped force Mr. Jammeh to relinquish power, analysts believe.

The UN Secretary-General's Special Representative and head of the United Nations Office for West Africa, Mohamed Ibn Chambas, stressed that "for Mr. Jammeh, the end is here and under no circumstances can he continue to be president."

Of greatest concern was the threat by ex-president Jammeh to withdraw Gambia from the International Criminal Court. However, after his victory at the polls, Mr. Barrow took a different tack, announcing that the country would remain in the ICC and hinting that criminal charges could soon be pressed against Mr. Jammeh himself.

## Lessons learned

A last-minute agreement brokered by ECOWAS suggests Mr. Jammeh may have been concerned about his post-presidency life. The final agreement guarantees "the dignity, respect, security and rights of former President Jammeh."

In an interview with *Africa Renewal*, Professor Cheeseman listed three lessons that countries can learn from The Gambia. The first lesson is that "opposition unity is critical to opposition success."

As the elections approached, two parties, the Gambia Party for Democracy and Progress and the Gambia Moral Congress, combined to form the Peoples' Alliance, led by Mr. Barrow. This allowed the coalition to successfully wrestle power from Mr. Jammeh's Alliance for Patriotic Reorientation and Construction Party.

The second lesson is that "fashionable biometric election technology is not required to remove an authoritarian government from power." Gambians voted with marbles, yet Jammeh lost. But Mr. Jammeh had anticipated victory, and his rejection of biometric voting, which uses biometric identifiers such as fingerprints to minimize election fraud, could have been a ploy to avoid a free and fair process.

The third lesson, continued Professor Cheeseman, is that "it is very dangerous to start talking about prosecuting leaders before they have actually left power," alluding to Mr. Barrow's publicized threat to bring charges against Mr. Jammeh before the ICC.

Mr. Barrow himself rode to power on a wave of populist messages: he has vowed to respect human rights, media freedom, civil society's right to free expression, and judicial independence. Last February he was spotted wearing a T-shirt reading, "Free Press for a New Gambia." Some interpreted this as a symbolic show of support for a free press and, perhaps, a dig at his predecessor.

## Hopes brighten for the future

It may take time before Gambians begin to enjoy the economic dividends expected in a functioning democracy. Because Mr. Jammeh strained The Gambia's relations with the EU, the country lost millions in precious aid money. As a result he looked to the Middle East and obtained a financial bailout. In 2015 he renamed the country "the Islamic Republic of The Gambia," a move that Gambians saw as an attempt to curry favour with his new allies.

The Gambia ranks 172 out of 186 countries in human development, according to the UN's Human Development Index report of 2016. The Index rates countries based on their progress in education, health and the environment, among other areas.

The Gambia's current administration has accused Mr. Jammeh of emptying state coffers and siphoning $11.4 million of state funds just before fleeing the country.

In light of the country's precarious financial situation, donors seem ready to respond positively. The EU recently pledged about $238 million towards a rescue package for the country. Even before donor funds flow in, Gambians are grateful that an electoral crisis that appeared poised to degenerate into civil strife was averted.

*A farmer in the drought-affected area of Senegal watering plants.* UN Photo/Carl Purcell

ENVIRONMENT

# Paris Agreement on climate change: One year later, how is Africa faring?

## Several African countries have begun implementing climate resilience activities

BY **RICHARD MUNANG** AND **ROBERT MGENDI**

Since December 2015, when 195 countries signed the Paris Agreement on climate change, several countries in Africa have begun implementing climate resilience activities that will allow them to better absorb and adapt to harsh climatic changes.

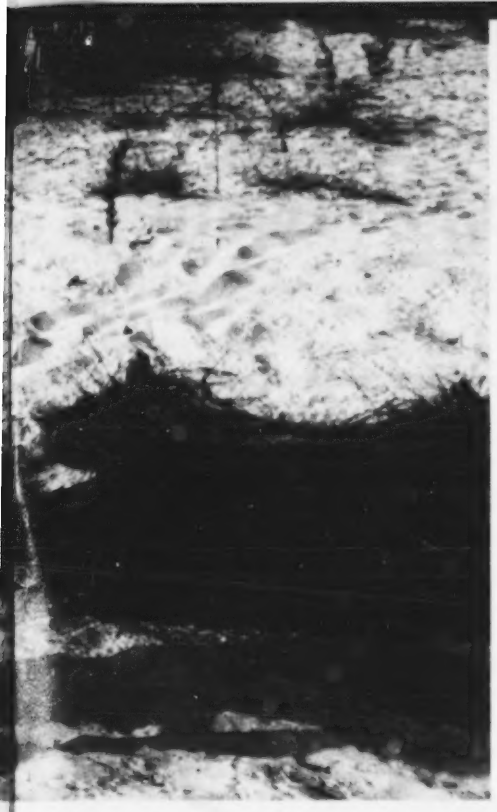
However, an assessment of the continent's progress in combating climate change brings to mind a popular African proverb: "A large chair does not make a king"—in other words, huge implementation challenges remain. Africa's policy makers, however, are eager to meet these challenges, believing that achieving the objectives of the climate change deal could unlock the continent's socio-economic potential.

Signed in late 2015, the Paris Agreement entered into force on 5 October 2016. One month later, at the COP22 (Conference of the Parties to the United Nations Framework Convention on Climate Change UNFCCC) in Marrakech, Morocco, world leaders formally adopted the Marrakech Action Proclamation, which recommitted parties to full implementation of the Paris Agreement. And implementation has since started.

As of April 2017, of the 143 countries that have so far ratified the agreement, 33 are in Africa, including Benin, Burkina Faso, Cameroon, Chad, Ethiopia, Gabon, Gambia, Kenya, Nigeria, Somalia, Tunisia, Uganda and Zambia. That is 60% of the total number of African countries.

Beyond the ratifications, many countries have also fulfilled a key requirement in the agreement by formulating their Nationally Determined Contributions (NDCs). The NDCs are the countries' individual efforts to achieve climate change goals. In their NDCs, the majority of African countries indicated plans to prioritize climate proofing development activities, especially in economic sectors such as agriculture and energy.

An example of climate proofing in the agriculture and energy sectors is the restoration of ecosystems, a development that is already gathering steam on the continent. Agenda 2063—a set of aspirations formulated by the African Union (AU) to point the way to prosperity on the continent—also



highlights ecosystem restoration as a way to catalyze socio-economic development.

The AU maintains that by applying ecosystem-based adaptation in the agriculture sector in combination with clean energy, countries can add agro-value chains, spur food security and increase economic opportunities along the value chain, while simultaneously lowering carbon emissions and conserving ecosystems.

Currently, Africa's development challenges are many. One serious disadvantage is that more than half of its 1.2 billion population lives on less than $1.25 per day—the standard threshold for absolute poverty. Also, about 60% of Africa's unemployed are youth. Food security is also a problem: a quarter of Africa's population goes to bed hungry, while more than 200 million Africans suffer from severe malnutrition.

## Africa's strengths

To respond to these challenges while implementing the Paris Agreement, experts say African countries should maximize the potential of key sectors capable of boosting socio-economic development. In other words, the focus should be on agriculture, food production and clean energy, among other sectors.

Africa's strengths lie in its immense natural resource potential and other 'sweet spots', including having 65% of the world's arable land and 10% of its inland freshwater resources. The continent's renewable energy potential can be realized through hydro as well as solar power. Harnessing these resources in a sustainable way will boost Africa's development.

Agro-value chains in Africa, if properly harnessed, can reduce poverty two to four times faster than any other sector, according to the World Bank. The agricultural sector's projected value by 2030 is $1 trillion, and this sector could potentially provide 17 million jobs, says the Bank.

The Paris Agreement accentuates the opportunities in Africa's economic sectors; what remains is for countries to implement the agreement with full attention to domestic development needs.

## Ecosystem-based adaptation

The UN Environment, which promotes sustainable environment through sound policies and practices, is providing technical and other forms of assistance to African countries implementing the Paris Agreement to enable them to adequately address socio-economic challenges, particularly food insecurity and unemployment, as well as macroeconomic growth.

The Ecosystems Based Adaptation for Food Security Assembly (EBAFOSA) is one of the initiatives to power sustainable agro-industrialization. EBAFOSA is facilitated by the UN Environment supported by the AU and state and non-state actors, including private-sector partners. Ecosystems-based adaptation for food security consists of methods of agricultural production that promote conservation and sustainability through integrated management of land, water and living resources.

Many of the 40 African countries implementing EBAFOSA are successfully using a combination of policies and other operational interventions to address socio-economic priorities, offset carbon emissions and protect ecosystems.

In the Democratic Republic of Congo, for example, a group of young agri-preneurs (agricultural entrepreneurs) are using clean energy to process cassava (an indigenous climate resilient crop) into flour. They then package and standardize the flour before selling it. An agri-preneur can rake in up to $4,000 weekly. This business model reinforces the overarching argument for green initiatives, which is that it can be a win-win: protecting the environment can also benefit the bottom line.

## A boost for SDGs

A green initiative such as that of the Congolese agri-preneurs will contribute to Sustainable Development Goal (SDG) 13 (combating climate change), SDG 7 (affordable and clean energy), and SDGs 1 and 2 (tackling poverty and boosting food security).

In Kenya, the use of information and communications technology to garner pertinent information for financing purposes is increasing agricultural production and promoting a clean energy value addition. Through EdenSys, an end-to-end agri-business management app for mobile phones and computers, enterprises engaging in EBA and clean energy agro-business activities can post their financial records online and use them to apply for loans. A number of microfinance institutions are providing these loans, which indirectly contributes to the SDGs pertaining to climate change, clean energy, the elimination of poverty and food security.

In Makueni County in eastern Kenya, the UN Environment is helping local authorities create a climate change fund. The plan is to make the fund a financing pool for climate resilience activities, particularly those focusing on ecosystems-based adaptation for food security. The fund will be the first of its kind in Africa.

Makueni County's climate fund goal is to set aside 50% of its portfolio as collateral for loans of up to 10 times the security sum. Enterprises engaging in ecosystems-based, adaptation-driven agriculture and clean energy value addition could benefit from such loans.

While Africa may have lagged in development in the past decades, the Paris Agreement provides an opportunity to accelerate socioeconomic development. Instruments such as the global SDGs, the AU's Agenda 2063 and the Paris Agreement are creating the policy framework and operational paths to sustainable development, experts say.

So far Africa's climate change implementation activities are encouraging. The questions are how much longer countries can maintain the momentum and how much support, especially financial, will come from abroad. On these, the jury is still out.

TECHNOLOGY

# Africa's digital rise hooked on innovation

## Engineers are adapting technology to suit the specific needs and dynamics of the continent

BY **ELENI MOURDOUKOUTAS**

***A Kenyan teacher checks his mobile phone while guarding his cattle.*** *Panos/Sven Torfinn*

When the world was changing from mechanical and analogue technology to digital electronics four decades ago, Africa was nowhere on the scene.

Fast-forward to the present, and Africa has largely been able to catch up with other regions in mobile phone use and Internet access, successfully sidestepping the era of desktop computers and landlines.

The key to Africa's achieving its own digital revolution has been innovation at every step, with engineers adapting technology to suit the specific needs and dynamics of the continent instead of the other way around.

About 80.8% of Africans own a mobile phone, according to 2016 data from the International Telecommunication Union (ITU), the United Nations agency for information and communication technologies. This is a 10% jump from 71% in 2014.

Africa remains the fastest-growing mobile phone market in the world, and is on track to have 725 million smartphone users by 2020, according to a 2016 report by the Global System for Mobile Communications Association or GSMA—a trade body representing the interests of mobile operators worldwide.

The majority of cell phone users in Africa are not using smartphones. Across seven countries—Ghana, Kenya, Nigeria, Senegal, South Africa, Tanzania and Uganda—only 15% of respondents reported having a smartphone in a 2014 survey by the Pew Research Center, a "fact tank" based in the United States that informs the public about the issues, attitudes and trends shaping the world. Instead, until recently, many Africans used "feature phones"— lower-cost mobile phones with limited capabilities.

According to one study, however, by 2019 feature phones will account for only 27% of Africa's mobile

**725mn**

**smartphone users by 2020 in Africa, the fastest-growing mobile market in the world**

handset market. The market for smartphones—fuelled by handsets priced at under $100 per unit—continues to grow.

A recent report by the global technology consulting firm International Data Corporation predicts smartphone shipments will top 155 million units by the end of 2015 in the Middle East and Africa—after increasing by 66% during the first quarter of 2015.

Feature phones are equipped to handle calling and messaging, as well as basic text-based apps, which are generally tailored to address a community's specific needs. One prominent example is M-Pesa, the popular mobile money system in Kenya that allows users to store money on an account on their phones and make payments via secure SMS text messages.

Other innovative apps range from a South African start-up called Livestock Wealth, used to buy and sell cows, to M-Kopa—an expansion of M-Pesa used in Kenya, Tanzania and Uganda to generate solar electricity for domestic purposes and, of course, to recharge cell phones.

According to GSMA, mobile services accounted for 6.7% of the continent's GDP in 2015, largely due to their ability to stimulate financial development. For example, farmers can now, by sending a message to a code, find out market prices for crops before going to market, says Ernest Acheampong, a research analyst at the African Technology Policy Studies Network, based in Nairobi.

"Mobile phones have really changed the face of how we do business in Africa," Mr. Acheampong told *Africa Renewal*.

## Internet Access

A major reason for cell phones' ability to transform Africa so successfully is that they serve as the primary platform for Internet access. Internet penetration reached 29.3% on the continent in 2016, according to data from ITU.

Thanks in part to submarine Internet cables lining the continent's coasts, Internet access has become more affordable and has increased in quality since the first cable in 2002. High-bandwidth undersea cables enabled countries to upgrade from 2G to 3G technologies, and even 4G/LTE in Addis Ababa and Nairobi.

GSMA foresees 80% of the African continent being connected to 5G internet networks by 2022.

Mobile phones coupled with Internet access have allowed governments to put their services online and digitize their records. Rwanda bills itself as the continent's leader in complete digitization. For the past 15 years, the country has been working to digitize its education, health care and economy, and now it is pushing to be Africa's first cashless society in the public sector; it is already paying its government employees electronically.

In late 2015 the government in Kigali rolled out Irembo, an e-platform billed by Rwandans as a one-stop shop for government services and applications. The online portal offers a list of 44 services, including registration for birth certificates and driving licences, passport applications, and it accepts a variety of digital payment methods.

A major reason for cell phones' ability to transform Africa so successfully is that they serve as the primary platform for Internet access.

A 2014 World Bank Group report noted that digitization of economies contributes to broad economic growth, individual financial empowerment, and financial inclusion.

## Challenges

The greatest obstacle to digitizing Africa is financial. Despite the price of smartphones dropping to under $100 in 2015, that amount is still high for Africa's poor, and the added cost of data plans is often prohibitive.

Remote areas in Africa face additional challenges, as it is often difficult to connect these regions to the Internet due to poor infrastructure and lack of funding. Investors are hesitant to finance Internet cable expansion into rural areas, since the profit margin is lower than in urban areas.

Suveer Ramdhani, the chief development officer at Seacom, a pan-African Internet service provider based in Mauritius, says private-public partnerships are the best way to combat this, as they force private companies to duplicate in remote areas the infrastructure that they have produced for urban areas.

Mobile phones and mobile platforms have also become dynamic tools for promoting democracy during elections in Africa, as they can be used to quickly communicate results, hot spots where electoral violence may occur and general election information, a major step towards encouraging transparency. Experts agree that they are also crucial in efficiently organising demonstrations and other political activities.

However, the power of information is not missed on certain African governments, some of which took to shutting down networks or certain websites during elections and other politically sensitive periods. In 2016, Cameroon, Chad, the Democratic Republic of the Congo, Gabon, Gambia, the Republic of Congo and Uganda blocked access to social media, while others, such as Ethiopia, Madagascar and Tanzania, introduced censorship legislation.

One initiative to circumvent such blocks comes from the Tor Project, a non-profit creating free software to enable anonymous communication. Its mobile app, OONI-Probe, works by detecting censorship and allowing users to access restricted content anonymously.

While some aspects of Africa's digital revolution are still lagging, the continent as a whole is looking towards the future.

"The prospects are great. You have a lot of interest in people developing innovations that are related to mobile technology," said Mr. Acheampong cheerfully.

## By the numbers

**80.8%**
the percentage of Africans who own a mobile phone

**6.7%**
the percentage of the continent's GDP attributed to mobile services

**80%**
the percentage African continent connected to 5G internet network by 2022

# The Internet of everything water

## Local communities boosting water monitoring systems using the Internet

BY **IHUOMA ATANGA**

Imagine a world where your spice cabinet reminds you to buy salt, or your cell phone sends a text message about the amount of water left in your water tank. These are the wonders of the Internet of things (IoT).

It has been over a decade since Kevin Ashton, co-founder of the Massachusetts Institute of Technology's Auto-ID Center (now Auto-ID Labs), coined the term *Internet of Things* to describe the network and communication of physical objects that have an IP address for the Internet.

Since then the world has transitioned into a digital age, one in which IoT devices are being harnessed to improve quality of life on a global scale. African countries such as Ghana, Niger, Rwanda and South Africa, among others, have seen a steady rise in successful IoT implementation meant to improve key areas of sustainable development—water monitoring being one of the most popular sectors.

In order to get the full picture of how IoT technology works to improve water monitoring, *Africa Renewal* talked to Ilana Cohen, the senior market engagement manager of the Mobile for Development Utilities Programme at the Global System for Mobile Communications Association or GSMA—a trade body representing the interests of mobile operators worldwide.

GSM, the global system for mobile communications, refers to the Internet of Things as a broad concept, describing it as an open, digital cellular technology used for transmitting mobile voice and data services.

Mobile technology enables IoT applications to function machine-to-machine (M2M), meaning machines use network resources to communicate with remote application infrastructure, like a water meter, for the purposes of metering and control.

For emerging utility models mostly operating in rural locations, GSM remains the most widely used machine-to-machine technology to transfer data over long distances. However, because GSM consumes a lot of power and relies on network coverage that is mostly unreliable in rural areas, utility companies are switching to NarrowBand (NB IoT) because it is cheaper and consumes significantly less power, which is ideal for utility applications that mostly require occasional connectivity with minimal throughput. The NB IoT standard is starting to emerge as the preferred mode by users.

***An official checks data from an internet-based water monitoring device at a borehole in Basbedo, Burkina Faso.*** Panos/Andrew McConnell

Sensors and actuators (a component in a machine that is used to induce or control motion) used by water-related IoT devices can detect anything from changes in temperature and chemical composition to water quantity and soil humidity. They can even report a faulty water pump.

The good news is that the implementation of this technology in Africa is not a thing of the future; it is happening now with start-ups and institutions embarking on missions to conserve water, provide clean water, irrigate farms and monitor water usage, among other objectives.

Traditional water meters are notorious for inaccuracies in reporting water consumption; consumers sometimes pay for water not used, or find themselves unable to pay, where there is a dispute in payment, the accumulated cost of running water at home. The consequence of non-payment for services is that utility companies cannot

sustainably provide safe drinking water to certain areas, and for customers it means possibly consuming unsafe water, or allocating more time and resources to finding clean water away from the comfort of their homes (e.g. from standpipes). In underserved communities in Niamey, Niger, where residents use CityTaps smart metres, consumers have gained access to running water at home, and spend 15 times less than they previously did.

In Niger, CityTaps, a social and tech company seeking to provide running water to every urban home, provides IoT tech solutions via smart metres to the national utility company, Société d'Exploitation des Eaux du Niger (SEEN), helping them provide drinking water to underserved communities in a sustainable manner.

In Rwanda, SweetSense—a tech company that provides low-cost remote monitoring for water, energy and environmental projects—uses sensor technology to monitor water pump performance.

In South Africa, EZ Farms, created by IBM Research, is an IoT remote water monitoring system that uses sensors on the field to tell small-scale farmers how to better manage water and agricultural aggregators (websites or a computer programme that sums up specific type of information from multiple online sources) to enable farmers identify the best prospects for business.

*Africa Renewal* spoke with Patrick Thomson, the lead researcher on the water programme at Oxford University's Smith School of Enterprise and the Environment and CityTaps, which are funded partly by the GSMA, to learn more about their work with water metering and conservation in East and West Africa.

Africa has a plethora of ongoing IoT water metering projects, one of which was launched in 2013 by the University of Oxford, spearheaded by Mr. Thomson. The project started off with a 12-month smart hand pump trial in Kyuso town in Kitui County, Kenya, with the goal of resolving the problem of constant breakdown of water pumps.

According to a report on harnessing the Internet of Things for global development by the International Telecommunication Union, a United Nations agency whose purpose is to coordinate telecommunication operations and services throughout the world, "Water service reliability is closely correlated with extreme poverty and water insecurity in rural areas. Around one million hand pumps supply water to over 200 million rural water users across Africa, yet as many as one-third of all hand pumps are thought to be broken at any given time."

Mr. Thomson described the impact of the water pump project on the community as money-saving and transformative. He mentioned a crucial thesis question posed by his colleague, Dr. Tim Foster: "Could we do things differently if the hand pump itself could tell you it was broken?" This thesis question has been answered by the success of the project. Mr. Thomson and his team found ways for a pump to literally tell you when it is defective, via a GSM network.

### How does this technology work?

Mr. Thomson explained: "A device in the pump handle uses an accelerometer, just like the one in your smartphone that works out which way you are holding it, to sense the movement of the handle. From this movement we can tell if the pump is working and how much water is being produced by it. This information is then transmitted over the GSM network to a central server, where we process and present this information." In a matter of 48 hours, as opposed to several weeks, the pump is repaired.

> "Water service reliability is closely correlated with extreme poverty and water insecurity in rural areas. Around one million hand pumps supply water to over 200 million rural water users across Africa, yet as many as one-third of all hand pumps are thought to be broken at any given time.

Moreover, since the success of the Kyuso project, Mr. Thomson said other new and exciting findings have emerged that could completely prevent any kind of water pump breakdown in the future.

In a new water pump project supported by UNICEF in Kwale County in southeast Kenya, new research is underway to determine how the data from the accelerometers can be used to determine the depth of the water beneath the pump, in order to monitor the condition of the pump. This way an accurate breakdown prediction can be made before the pump actually stops working. The objective is to reduce pump downtime to zero, Mr. Thomson explained.

CityTaps founder Grégoire Landel explained to *Africa Renewal* how the company's IoT tech solution works, saying that CityTaps provides utility companies with guaranteed pay for their water services via a prepaid meter system that uses mobile money. The utility company installs the smart pay-as-you-go water metres that help monitor the exact amount of water used. The company's goal is to supply communities in need with clean running tap water.

Implementing these technologies involves complexities and challenges. While recounting his experience in West Africa, Mr. Landel said he has witnessed water and energy utility companies perform 'little miracles' daily for the people they serve. Once people see the fundamental benefits of the product, they are usually willing to pay for what is generally a much better quality of life.

In the case of the Kyuso project, Mr. Thomson said that while there isn't an excess of challenges, some communities and governments are more open to projects that meet their immediate needs. He and Mr. Landel believe it is important to watch, listen and develop solid relationships within the community in order to build technology that best serves it. It is, after all, the people that determine the success of the product and give meaning to the projects.

Can we benefit if the water pump itself can tell you it is broken? The answer is a simple and definitive yes. A broken hand pump that goes unfixed is expensive and dangerous to the community that depends on it. Water is life, and the Internet of Things is doing its part to provide sub-Saharan Africa with smart and affordable ways of monitoring, metering and conserving, and by so doing bettering the lives of urban and rural communities in the region.

# BOOK REVIEW

## The Rise of Africa's Middle Class

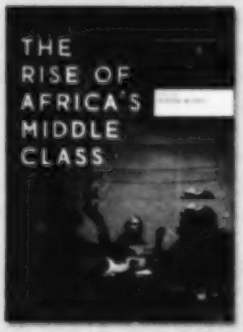
*by Henning Melber*

Zed Books, London, UK, 2016. 288 pp; $34.95

The book, *The Rise of Africa's Middle Class*, poses a perplexing question about Africa's middle class: "By definition, 'middle class' is a relative term—it's somewhere above poor but below rich, but where?"

This fluidity and lack of definition on what makes up Africa's middle class, especially since the continent is experiencing the emergence of a notable middle class only recently, has captivated many anthropologists and researchers into finding out what sets this economic class apart from others and what exactly defines it as being "middle."

Henning Melber, a senior adviser of both the Nordic Africa Institute and the Dag Hammarskjöld Foundation in Sweden, is one such researcher who has sought to provide a framework to define the term. Mr. Melber, initially, through recent writings in Organisation for Economic Cooperation and Development (OECD) reports and the UNDP Human Development Reports, explained that middle class "is used in an inflationary manner to cover almost everything without any further internal differentiations that exist within a very broad band of income groups, thereby signifying little to nothing."




As such, Mr. Melber's 288-page book provides empirically-backed case studies on sub-Saharan African countries such as South Africa and Kenya that shows a diverse array of perspectives of what middle class in Africa entails. He is able to weave together short essays along with the input of political scientists, economists as well as development experts to further explore the status of the continent's middle class.

***— Pavithra Rao***

# APPOINTMENTS

UN Photos

United Nations Secretary-General António Guterres has appointed **Vera Songwe** of Cameroon as Executive Secretary of the United Nations Economic Commission for Africa (ECA). She most recently served as the International Finance Corporation's regional director covering West and Central Africa. Ms. Songwe succeeds Carlos Lopes of Guinea-Bissau.

UN Photos

**Jeremiah Kingsley Mamabolo** of South Africa has been appointed as the joint special representative for Darfur and head of the African Union-United Nations Hybrid Operation in Darfur (UNAMID). He most recently served with UNAMID as deputy joint special representative (Political). Mr. Mamabolo succeeds Martin Ihoeghian Uhomoibhi of Nigeria.

UN Photos

**François Louncény Fall** of Guinea has been appointed as special representative of the secretary-general and head of the UN Regional Office for Central Africa (UNOCA). Prior to his appointment, he had been serving within the same office in an acting capacity since November 2016.

UN Photos

**Najat Rochdi** of Morocco has been appointed as deputy special representative for the UN Multidimensional Integrated Stabilization Mission in the Central African Republic (MINUSCA), where she will also serve as the UN resident coordinator, humanitarian coordinator and resident representative of the UN Development Programme. Ms. Rochdi succeeds Fabrizio Hochschild of Chile.

UN Photos

**Maj-Gen. Tesfay Gidey Hailemichael** of Ethiopia has been appointed as force commander for the UN Interim Security Force for Abyei (UNISFA). He most recently served as the head of the Defence Logistics Department in the Ethiopian Armed Forces. Maj-Gen. Hailemichael succeeds Maj-Gen. Hassen Ebrahim Mussa, also of Ethiopia.

UN Photos

**Major General Jean-Paul Deconinck** of Belgium has been appointed as force commander of UN Multidimensional Integrated Stabilization Mission in Mali (MINUSMA). Prior to his appointment, Maj-Gen. Deconinck had served as commander land forces of the Belgian armed forces from September 2014. He succeeds Michael Lollesgaard of Denmark.

## It is time to save our oceans
from page 3

In June, when scientists and representatives of governments and civil society gather at the UN headquarters in New York for the crucial Ocean Conference, they will discuss ways to prudently manage ocean resources for sustainable development, which is Sustainable Development Goal (SDG) 14. But individual African governments, with support from the World Bank, the UN and other institutions, are already taking measures to tackle climate change, overfishing and plastic in the ocean.

The Rwandan government has banned plastic bags, Liberia and Sierra Leone have enacted acts to regulate fisheries and installed ocean surveillance systems, fishing communities in Cape Verde have organized to protect fishing zones, and Mozambique has carved out an area for conservation that includes coastline.

Sylvia Earle, a renowned American oceanographer, says that she's hopeful that life in African seas, though in trouble, is not dead. Sounding a note of optimism, Mr. Thomson says, "I have no doubt that we will break this problem."

## Overfishing destroying livelihoods
from page 5

satellite-based monitoring system. Sierra Leone's sea monitors recently arrested over 14 industrial vessels. In 2015, Senegal enacted a fisheries code, focusing on community-led fisheries management. Some of the 12 participating fishing communities are reporting up to 133% increase in returns.

Fishermen in Cape Verde fishing communities of Palmiera and Santa Maria have organized themselves to protect fishing zones. In southern Africa, Mozambique created and is protecting a conservation area, including a coastline.

The FAO in 2009 framed the Port State Measures Agreement (PSMA) to stop pirate fishing. But it was not until 2016, after the US signed and inspired other countries to join, that the treaty became operational. The agreement makes fishing control easier by, among other measures, designating ports for use by foreign-flagged vessels. This is expected to contribute to stopping IUU.

The efforts of ocean resources conservation advocacy groups, policy frameworks and capacity building of coastal nations spearheaded by international organisations such as the UN and the World Bank, and increasing awareness among countries and citizens of the consequences of IUU, could potentially slow, if not reverse, overfishing in Africa, experts say. Time will tell.

## Urban growth a boon for ...
from page 15

This year's ECA report corroborates the Mo Ibrahim Foundation's argument. "Africa's unguided urban expansion risks perpetuating non-inclusive and unsustainable development growth," warn the authors of the report. For that reason governments are advised "to make hard choices for the scale and type of investments they need to make, and for the spatial pattern (where the cities are located and how they interact) and urban form they want to see."

The ERA acknowledges those countries making efforts to tackle urbanization fallout, such as by building new cities, but it sees room for improvement.

"When we call for urbanization and industrialization to be included and prioritized in national development plans, we are not advocating for a return to centralized and rigid national development plans of the past," Mr. Elhiraika clarified at the report launch.

Population growth, according to Mr. Elhiraika, could lead to a rise in the middle class population, which in turn would trigger new consumption patterns, leading to an increase in demand for processed goods, a development that itself presents an opportunity for industrialization.

What Africans must do, he concluded, is add value locally to valuable mineral and agricultural resources.

## Global economic gravity moving ...
from page 19

**How is UNDP supporting Africa's development?**

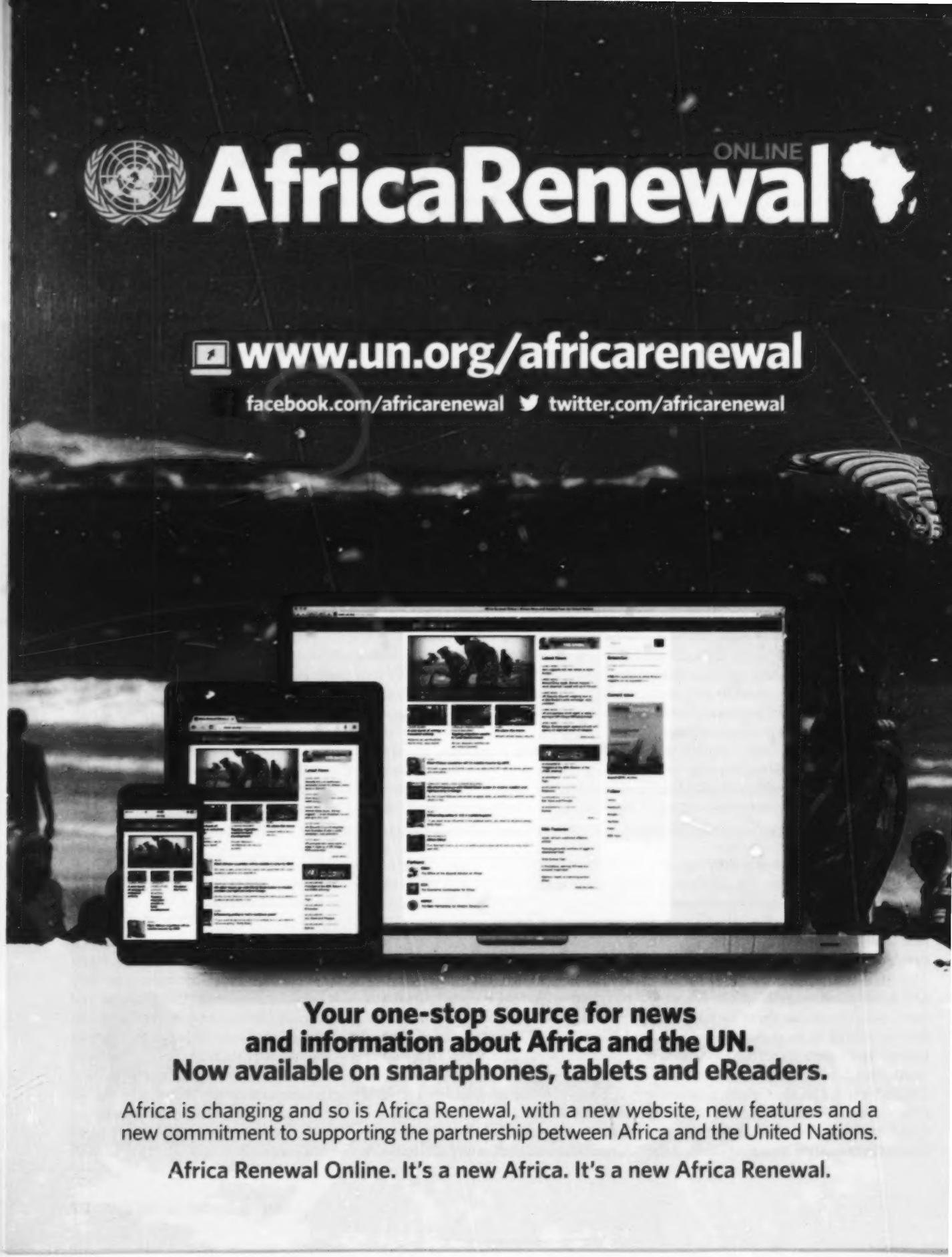
Africa is the heart of opportunity and home to about 60% of our investments [UNDP invests about $5 billion a year in Africa] and my greatest pride is that when we were preparing for Agenda 2030, [the UN's development framework], UNDP supported the African Union Commission in formulating the African Common Position. Africa's Agenda 2063 [the AU's regional development blueprint] is 90% in congruence with the Agenda 2030. I would recognize a modest credit to UNDP for supporting the African Common Position.

**What's your vision for the African economy?**

The centre of global economic gravity is tilting slowly but surely towards Africa. Countries like China, India and Turkey and others sense that Africa is the future of the world, where you can get the highest returns on investment. I bet that if we manage to deal with insecurity in the Sahel, in the Great Lakes, in the Horn of Africa, Africa will be the new El Dorado.

## Ocean Conference: Our best ..
from page 11

from talking to big member states, that everybody realizes that this is our best and last chance to get things right. I am very hopeful that we can turn things around. I've got grandchildren—I want them to have an ocean where they can see live coral, where they can see fish in the ocean. I've been to parts of the world—I'm a diver—where you swim in the water and see nothing. It's beautiful and the water is clear. But you see no life, no fish. We don't want that to happen to the ocean.

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